



# Jack of Spades User's Guide



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# Chapter 1: Introduction

This section covers:

- Overview
  - About this guide
  - About the Jack of Spades PC Card
  - CardBus PC Cards
  - Ositech's DPI technology
  - K56flex™ technology
  - Registering your modem
- 

## Overview

Congratulations on your purchase of the Jack of Spades PC Card. The Jack of Spades PC Card is a CardBus 10/100 Fast Ethernet and 56Kbps Data+Fax modem PC Card which contains Ositech's Digital Phone Interface (DPI) technology. The Jack of Spades PC Card incorporates Rockwell's K56flex technology.

Using Ositech's optional cellular kit, the Jack of Spades PC Card can connect via cellular phones.

At Ositech, we constantly strive to improve our products. You can take advantage of our latest technology and features by downloading up-to-date software from our website, [www.ositech.com](http://www.ositech.com).

## About this Guide

This guide provides installation and operating instructions for the Jack of Spades PC Card. Use the following features to locate information in this guide:

- Click on Internet addresses to link directly to the website.
- Click on text that is colored or underlined to link to the related section or topic.
- Click on bookmarks to link to the associated location (or page).
- Notes and cautions are marked with an icon in the margin.

## Conventions

Throughout this manual, the term digital telephone system refers to any digital or digital-hybrid telephone system, such as PBX. Windows NT refers to version 4.0. PCMCIA and PC Card are synonymous. Windows 95 refers to Windows 95 OSR2.x.

Font conventions used in this guide:

- Buttons, tabs, window names, and disk names are denoted with an initial capital and are italicized: *click Apply*.
- Keys you press on the keyboard are denoted with an initial capital: *press Enter*.

- File names, and commands you enter using the keyboard are denoted with a different font: type `atdt`.
- On screen messages are denoted with a different font in bold: the following message appears: **Connection Established!**

## About the Jack of Spades PC Card

There are two Jack of Spades PC Card models: North American and International. The Jack of Spades PC Card offers a number of unique features designed to integrate today's portable and laptop technology with user needs:

- 10BaseT or 100BaseTX connection capabilities.
- Fully-internal 56Kbps data, 14.4Kbps fax modem.
- Built-in Digital Phone Interface (DPI) technology allows your Jack of Spades PC Card to connect through digital (PBX) phone systems.
- Windows-based configuration software and DPI Assistant.
- Digital Line Protector protects the Jack of Spades PC Card from damage if connected directly (not through a handset cable) to a digital phone line.
- Power conservation mode reduces power consumption when the network or modem feature is not in use.
- 2MB of Flash ROM.

## Ethernet

The Jack of Spades Ethernet features fully support the following:

- 10BaseT and 100BaseTX Fast Ethernet 802.3u-1995.
- Data transfer via programmed I/O or memory mapped I/O.
- Category 3, 4, and 5 cables with RJ-45 connectors.

## Modem

The Jack of Spades is a 56Kbps Data+Fax modem with Ositech's fully internal Digital Phone Interface (DPI).

## Data Mode

The Jack of Spades PC Card fully supports the following industry and ITU-T standards:

- V.90 and K56flex simultaneously.
- 16550 COM port interface.
- DTE speeds up to 230,400bps.
- Hayes AT command set.
- V.90, K56flex, ITU-T V.34 Annex 12 (33,600), ITU-T V.34, V.32bis, V.32, V.22bis, V.22, V.21 and Bell 212A and 103 operations.
- V.42 LAPM, MNP 2-4 error correction protocol.
- V.42bis and MNP 5 data compression.

The Jack of Spades PC Card ships with V.90 Dual Mode (simultaneous V.90 and K56flex™). Updates to the V.90 standard are available on our website.

## Fax Mode

The Jack of Spades PC Card fax mode supports Class 1 and Class 2 AT fax commands. To use the fax mode, you must use a fax communications software package. The Jack of Spades PC Card supports the following fax standards:

- Fax rates up to 14.4Kbps.
- ITU-T V.17, V.29, V.27ter and V.21 channel 2.

## Cellular Mode

The Jack of Spades PC Card is designed to function with an optional cellular kit which allows the Jack of Spades PC Card to connect to a variety of cellular phones. For an up-to-date list of the cellular phones currently supported, please contact Ositech.

The Jack of Spades PC Card Cellular model supports MNP 10EC error correction protocol for cellular communication.

## CardBus PC Cards

CardBus PC Cards are designed for CardBus computers only. CardBus (32bit) PC Cards offer dramatically increased performance over older 16bit PC Cards. CardBus PC Cards and compatible computers use specialized hardware. For this reason, CardBus PC Cards are not backwards compatible with older 16bit PC Card slots. Contact your computer manufacturer to determine if your computer is CardBus capable.



Do not try to insert the Jack of Spades PC Card into a non-CardBus PC Card slot. Otherwise, the Jack of Spades PC Card and the non-CardBus PC Card slot might be damaged.

## Ositech's DPI Technology

The Jack of Spades PC Card is an analog modem which can connect, using Digital Phone Interface (DPI) technology, to digital (PBX) phones found in most businesses and hotels. Without access to a standard analog wall jack, the fully internal DPI technology is an economical way of connecting a TRUMPCARD modem to a digital (PBX) phone system.

## DPI is not Digital Line Protector

Unlike Digital Line Protector or some other form of digital line protection, DPI allows your modem to connect through digital (PBX) phones. DPI is an interface. Digital Line Protector is a defence—it protects analog modems from damage caused by the higher currents of digital phones. Digital Line Protector is not an interface and cannot allow your modem to connect through digital phones.

## K56flex™ Technology

Conexant has developed a new standard in modem speeds. K56flex can be twice as fast as traditional modems, which are limited to speeds of 33.6Kbps. Since K56flex digitally encodes downstream data, speeds of up to 56Kbps can be achieved.

To obtain 56Kbps connections, your 56K modem must connect to a K56flex ISP or corporate site. Considering 75% of modems use Conexant technology, K56flex offers you the highest probability of making a 56Kbps connection.

Conexant recognizes that serious Internet users need high speeds. We at Ositech recognise that Conexant sets the pace for modem chip technology and thus we have incorporated Rockwell's technology in our modems.

K56flex is compatible with the current V.34 standard. The Jack of Spades PC Card conforms to the ITU V.90 standard. The V.90 update is available on our website.

## Registering Your Jack of Spades PC Card

You can do one of the following to register your modem:

- Complete the electronic registration form on our website.
- Complete and return the registration card included in the box.

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## Chapter 2: Installing Your Modem

This section covers:

- Unpacking and inspecting the Jack of Spades PC card
  - Inserting the Jack of Spades PC card
  - Installing the software
- 

### Unpacking and Inspecting the Jack of Spades PC Card

Carefully inspect the contents of the box (listed below), to verify that everything you should have is included, and that nothing has been damaged during shipment. Retain the packing material in case the unit needs to be returned for service.



Figure 2-1: Jack of Spades box contents

## Package Contents

The package contents include:

- Jack of Spades PC Card
- QuickStart reference card
- Direct-connect modem cable
- DPI cable
- Direct-connect Ethernet cable
- RJ-45 coupler
- Jack of Spades Software disks
- Jack of Spades User's Guide disk
- CD-ROM containing modem/fax software.

## Inserting the Jack of Spades PC Card



Do not insert the Jack of Spades PC Card into a non-CardBus PC Card slot. Otherwise, the Jack of Spades PC Card and the non-CardBus PC Card slot might be damaged.

To install the Jack of Spades PC Card:

- 1 Orient the Jack of Spades PC Card as shown in the figure below.
- 2 Insert the Jack of Spades PC Card into the slot until it is firmly seated.

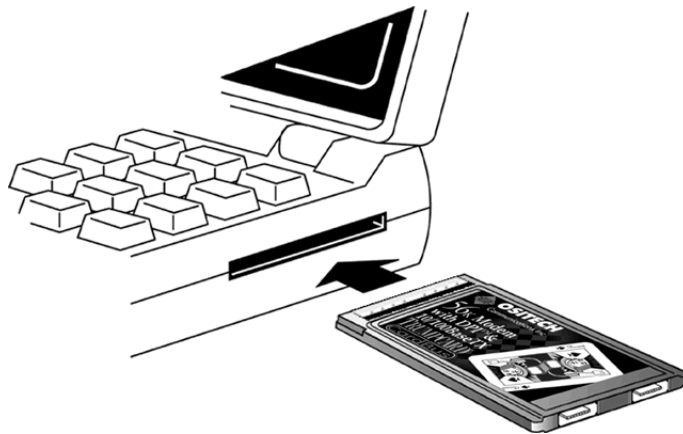


Figure 2-2: Inserting the Jack of Spades PC Card



The Jack of Spades PC Card is keyed to go in one way only. If you feel resistance before the Jack of Spades PC Card is inserted fully, remove it, align it as shown and re-insert it.

# Installing the Jack of Spades PC Card Software

The following section includes software installation instructions which apply to:

- Windows 98
- Windows 95 OSR2.x
- Windows NT 4.0

For all other operating systems, refer to the `Readme.txt` file on the Jack of Spades Software disk.



Following the installation process you might have to restart your computer. Close all open applications before starting the software installation process.

Determine which operating system you are using and follow the appropriate procedure.

## Windows 98

When the Jack of Spades PC Card is inserted into a CardBus PC Card slot for first time, Windows 98 automatically detects the Jack of Spades PC Card as a PCI Ethernet Controller and attempts to locate the necessary driver.

The Add New Hardware Wizard window opens.

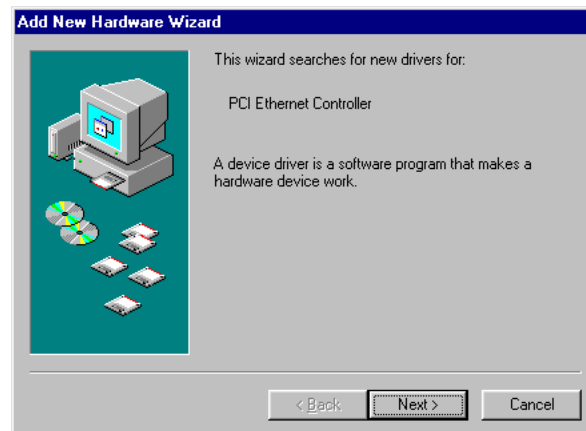


Figure 2-3: Add New Hardware Wizard window

To install the Jack of Spades PC Card in Windows 98:

- 1 Insert the Windows 98/NT disk into a 3.5 inch disk drive of your computer, and click Next.

Windows 98 identifies the PCI Ethernet Controller as the Ositech JoS CardBus 10/100 Ethernet device and installs the necessary driver.

Next, Windows 98 detects the PCI Serial Controller and attempts to locate the necessary driver.

- 2 Ensure the Windows 98/NT disk is inserted into a 3.5 inch disk drive of your computer, and click Next.

Windows 98 identifies the PCI Serial Controller as the Ositech JoS 56K DPI Modem device and installs the necessary driver and Ositech's TRUMPCARD PILOT software.

- 3 Restart your computer if prompted to do so.

The software installation is complete. Your Jack of Spades PC Card is ready for use.

## Windows 95 OSR2.x

When the Jack of Spades PC Card is inserted into a CardBus PC Card slot for first time, Windows 95 automatically detects the Jack of Spades PC Card as a PCI Ethernet Controller and attempts to locate the necessary driver.

The Update Device Driver Wizard window opens.

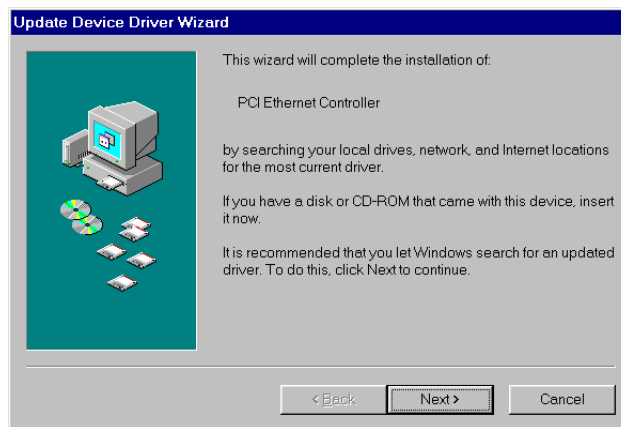


Figure 2-4: Update Device Driver Wizard window

To install the Jack of Spades PC Card in Windows 95:

- 1 Insert the Windows 95 disk into a 3.5 inch disk drive of your computer, and click Next. Windows 95 identifies the PCI Ethernet Controller as the Ositech JoS CardBus 10/100 Ethernet device and installs the necessary driver. Next, Windows 95 detects the PCI Serial Controller and attempts to locate the necessary driver.
- 2 Ensure the Windows 95 disk is inserted into a 3.5 inch disk drive of your computer, and click Next. Windows 95 identifies the PCI Serial Controller as the Ositech JoS Bus device and installs the necessary driver. Next, Windows 95 detects the Ositech Serial Controller and attempts to locate the necessary driver.
- 3 Ensure the Windows 95 disk is inserted into a 3.5 inch disk drive of your computer, and click Next.



Windows 95 identifies the Ositech Serial Controller as the Ositech JoS 56K DPI Modem and installs the necessary driver and Ositech's TRUMPCARD PILOT software.

- 4 Restart your computer if prompted to do so.

The software installation is complete. Your Jack of Spades PC Card is ready for use.

## Windows NT 4.0

If you do not use the Ositech enabler, Card and Socket services are required for PC Card use in Windows NT. This installation section includes instructions for installing the Jack of Spades PC Card with CardWizard v4.00.07 from SystemSoft, as well as Ositech's CardBus enabler (OSICBENA), which is supplied on the Windows 98/NT disk.

If you are using Cardwizard from SystemSoft, use this procedure to install the Jack of Spades PC Card software in Windows NT:

- 1 Insert the Windows 98/NT disk into a 3.5 inch disk drive of your computer.
- 2 Run the batch file, `crdwiznt.bat`. The batch file installs the registry files and copies over the necessary `INF` files.
- 3 Restart your computer.
- 4 Insert the Jack of Spades PC Card into a CardBus PC Card slot. CardWizard detects the Jack of Spades PC Card and installs the necessary files for Fast Ethernet operation.
- 5 From the Control Panel, double-click the Modems icon. The Install New Modem window opens.
- 6 Follow the dialog instructions to complete the Jack of Spades PC Card modem function installation.

If you wish to use the Ositech CardBus enabler, follow these steps to install the Jack of Spades PC Card software in Windows NT:

- 1 Insert the Windows 98/NT disk into a 3.5 inch disk drive of your computer.
- 2 Install the Ositech CardBus Enabler.
- 3 From the Control Panel, double-click the Network icon. The Network window opens.
- 4 Click the Adapter tab. The Adapters property page opens.
- 5 Click Add... The Select Network Adapter window opens.
- 6 Restart your computer. The Ositech CardBus enabler enables the Jack of Spades PC Card.
- 7 From the Windows 98/NT disk, copy the `INF` file to the `%SystemRoot%\INF` directory.
- 8 From the Control Panel, double-click the Modems icon. The Install New Modem window opens.
- 9 Follow the dialog instructions to complete the Jack of Spades PC Card modem function installation.

The software installation is complete. Your Jack of Spades PC Card is ready for use.



---

# Chapter 3: Configuring Your Communications Software

This section covers:

- Overview
  - Determining the correct communications port
- 

## Overview

The Jack of Spades PC Card works with virtually all communications software packages if the software is configured to work with the Jack of Spades PC Card.

Refer to the documentation supplied with your communications software for any information regarding modem setup. The specific configuration depends on your communications software and your computer's operating system.

## Determining the Correct Communications Port

To determine which communication port to use when configuring your communications software, follow the instructions in the section below.

### Windows 98, 95 OSR2.x and NT

The Jack of Spades is associated with the user-friendly device name Ositech JoS 56K DPI Modem under these operating systems. If your communications software does not support user-friendly device names and cannot support COM port settings, you can determine the required I/O Port and IRQ values as follows:

- 1 Click the Ositech logo located in the right corner of the system menu.
- 2 From the pop-up menu, select Ositech JoS 56K DPI Modem. The TRUMPCARD PILOT opens. Click the Information tab to display the JoS Information property page.
- 3 The COM port setting is listed in the JoS Information property page.
- 4 Configure your communications software for this COM port setting.



---

# Chapter 4: Making Modem Connections

This section covers:

- Overview
  - Using analog lines
  - Using digital (PBX) phone handsets
  - Using cellular phones
- 

## Overview

You can connect the Jack of Spades PC card to the telephone network through analog, cellular or digital (PBX) phones.

## Using Analog Lines

The Jack of Spades PC Card can send and receive data and faxes through analog telephone lines. To do so, you must connect the Jack of Spades PC Card to an analog telephone jack and then use your communications software to make a modem connection, or your fax software to send and receive faxes.

## Connecting to an Analog Telephone Jack

The Jack of Spades PC Card can connect directly to analog telephone jacks.

To connect the Jack of Spades PC Card to an analog telephone jack:

- 1 Plug the PC Card modem connector into the Jack of Spades PC Card.



The direct-connect modem cable is keyed to go in one way only. If you feel resistance before the connector is inserted fully, remove the connector, turn it over, and re-insert it.

- 2 Plug the RJ-11 connector into the telephone jack. If you wish to have both the telephone and the Jack of Spades PC Card connected to a single telephone jack, a telephone Y-connector (not included) is required.



If you connect your Jack of Spades PC Card directly to a digital phone network without using the DPI coupler, the Jack of Spades PC Card will not operate. Digital Line Protector protects the Jack of Spades PC Card from damage caused by the higher currents of digital phones.

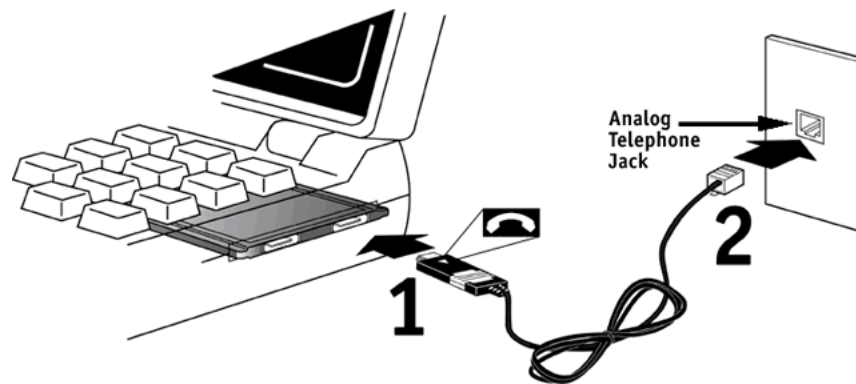


Figure 4-1: Connecting to an analog telephone jack

## Sending and Receiving Data and Faxes

Refer to your communications and fax software packages for more information about sending and receiving data and faxes.

Ensure you use the direct-connect modem cable to make connections through analog telephone lines.

## Using Digital (PBX) Phone Handsets

The Jack of Spades PC Card can connect to the telephone network via a digital phone using Ositech's built-in DPI technology. The connection is made using the coiled telephone cord which connects the handset to the base unit. The coiled telephone cord must detach from the handset to make this connection.



Ositech's DPI technology allows the Jack of Spades PC Card to connect and operate via a telephone handset connection. DPI technology does not allow the Jack of Spades PC Card to operate when directly connected to a digital wall jack.

## Connecting to a Digital (PBX) Phone Handset

To connect the Jack of Spades PC Card to a digital (PBX) phone handset:

- 1 Plug the DPI cable into the Jack of Spades PC Card.
- 2 Unplug the handset cord from the digital telephone handset jack and plug the handset cord into the DPI coupler.
- 3 Return the handset to the cradle.

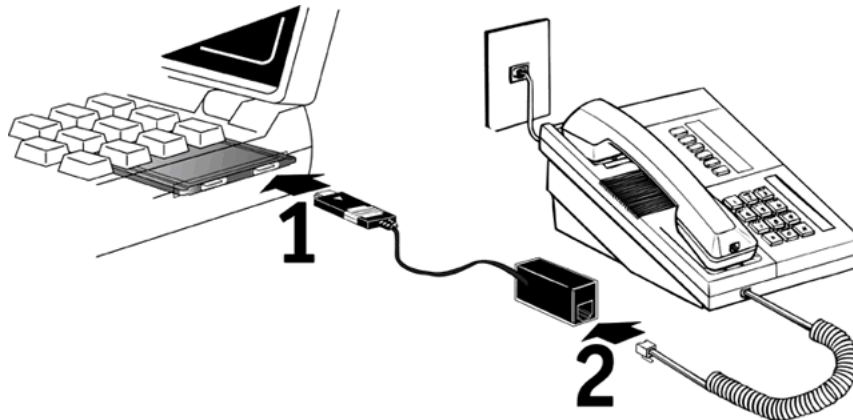


Figure 4-2: Connecting to a digital telephone handset

The digital phone handset is not attached to the telephone base unit nor the Jack of Spades PC Card.

## Sending Data and Faxes Through Digital (PBX) Phone Handsets

DPI connections require more operator intervention than standard analog connections, since with digital connections the handset must be operated manually for each call. There is also an extensive variety of digital telephone systems, each with its specific operating parameters.

The Jack of Spades PC Card comes preconfigured to operate with many digital telephone systems. If you are unable to establish a DPI connection using the preset DPI settings, use the TRUMPCARD PILOT to configure the modem for the telephone system you are using currently (refer details).

This procedure works with most communications software packages. To use your Jack of Spades PC Card for data or fax operations with a digital connection:

- 1 Operate your communications software as you do normally.  
When your communications software instructs the modem to dial, the DPI Assistant intervenes.
- 2 Follow the DPI Assistant dialog instructions to establish a DPI connection.  
If the digital (PBX) telephone system prevents the DPI Assistant from accessing an outside line, the DPI Assistant prompts you with the number to dial.

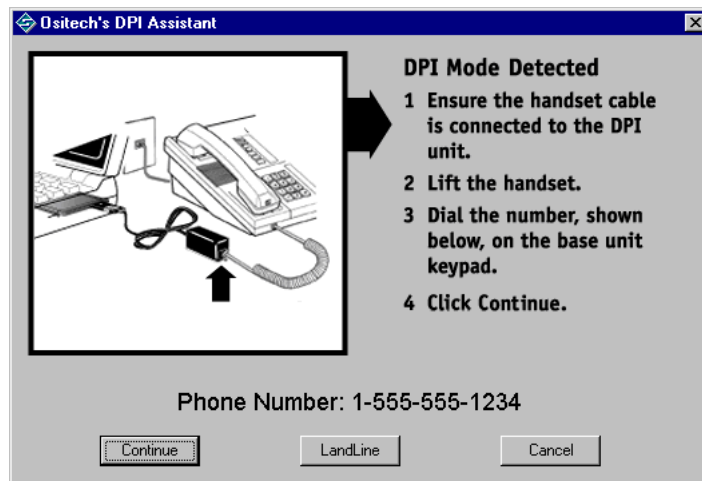


Figure 4-3: DPI Assistant with phone number

If the telephone system supports auto-dialing, you will only be prompted to lift the handset from the cradle.

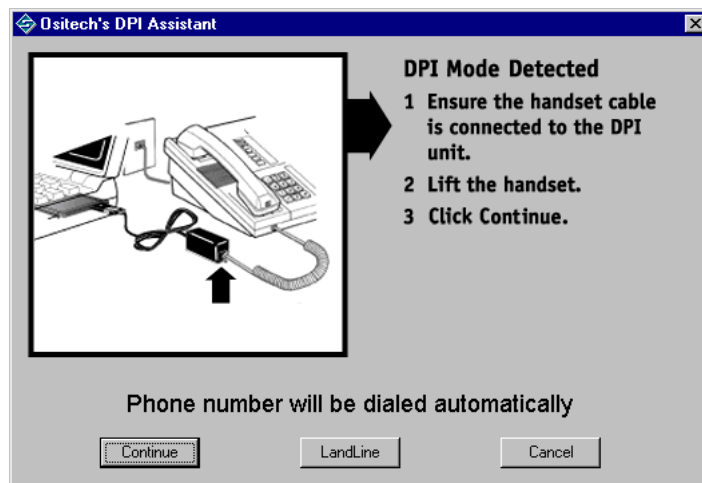


Figure 4-4: DPI Assistant to lift handset only

3 Click Continue to proceed with the modem connection.



Do not return the handset to the cradle until the modem connection is terminated. Returning the handset to the cradle terminates the modem connection.



Do not use handsfree mode. When the handset is removed from the cradle you should not hear what is occurring over the telephone line from the digital base unit.



## Using Cellular Phones

The Jack of Spades PC Card is designed to function with an optional cellular kit which you use to connect the Jack of Spades PC Card to a variety of cellular phones. For an up-to-date list of the cellular phones currently supported, please contact Ositech.

Refer to your communications and fax software packages for more information about sending and receiving data and faxes through cellular phones.

### Connecting the Direct-Connect Cellular Cable

To connect the direct-connect cellular cable, ensure that your laptop is booted up and:

- 1 Connect the direct-connect cellular cable to the modem.
- 2 Connect the direct-connect cellular cable to the cellular phone.
- 3 Turn on the cellular phone.

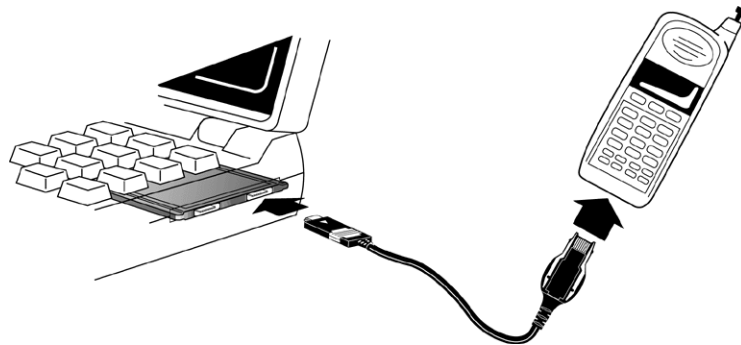


Figure 4-5: Connecting the cellular cable



The PC connector is keyed to go in one way only. If you feel resistance before the connector is inserted fully, remove the connector, turn it over, and re-insert it.

With the firmware and TRUMPCARD PILOT upgraded for cellular connections, and your modem connected to a cellular phone via the direct-connect cellular cable, you are ready to send and receive data and faxes through your cellular phone.

Cellular connections must be made with the intervention of communications software. For more information about making cellular connections, refer to the documentation which accompanied your communications software.

### Guidelines for Making Cellular Connections

For best results making cellular connections, use the following guidelines:

- Ensure your cellular phone battery is adequately charged.
- Stay in one location during a cellular connection.
- Avoid attempting to make cellular connections from a moving vehicle.

- Position the cellular phone with the antenna in a vertical position and as far away from the computer as possible.
- When making cellular connections inside a building, try to locate yourself as close to a window, and as far away from large metal objects (such as an elevator) as possible.
- Review the documentation which accompanied your communications software and cellular phone.

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# Chapter 5: Using T RUMPCARD PILOT

This section covers:

- Overview
  - Setting the GSM properties
  - Setting power management
  - Adjusting the DPI settings
  - Configuring the ISDN adapter
  - Sending AT commands to the PC card
  - Setting the Cellular properties
  - Setting the Country profile
  - Using the Contacts property page
- 

## Overview

Ositech's TRUMPCARD PILOT is the fastest way to use the advanced features of your Jack of Spades PC Card. The TRUMPCARD PILOT includes the following property pages:

- Information – Use this property page to check settings such as device description, port name and firmware version.
- DPI – Use this property page to adjust DPI settings for specific digital (PBX) phone systems. The DPI property page includes a database of DPI settings for popular digital (PBX) phone systems.
- Cellular – Use this property page to adjust cellular settings. This page is only available once your modem is upgraded for cellular operation.
- GSM Control – Use this property page to select GSM drivers. This page is only available once your modem is upgraded for GSM operation.
- ISDN Control – Use this property page to adjust ISDN settings. This page is only available once your modem is upgraded for ISDN operation.
- Country – Use this property page to apply the appropriate country profile for various countries. This control is only available with the International version of the Jack of Spades PC Card.
- Status – Use this property page to turn off the Jack of Spades PC Card and conserve your laptop's battery. You can also check whether the Jack of Spades PC Card is using Ositech's or Microsoft's serial driver.
- AT Session – Use this property page to send AT commands directly to the modem.
- Contacts – Use this property page to visit Ositech's website for news or software upgrades, and to email Ositech's Sales or Technical Support department.

You can also open the PC Card and Modem control panels from the TRUMPCARD PILOT.

## Adjusting the DPI Settings

The DPI property page displays the DPI settings. You can adjust the DPI settings using either the Option Settings or the Telephone System Settings. Also, you can create, import and export custom location profiles.

The easiest way to set the correct DPI settings is to identify the manufacturer of the digital (PBX) phone you are using.

To adjust the DPI settings using the Telephone System Settings:

- 1 Click the Ositech logo located in the right corner of the system menu.
- 2 From the pop-up menu, select Ositech JoS 56K DPI Modem. The TRUMPCARD PILOT opens.
- 3 Click the DPI tab. The DPI property page opens, displaying the current DPI settings.

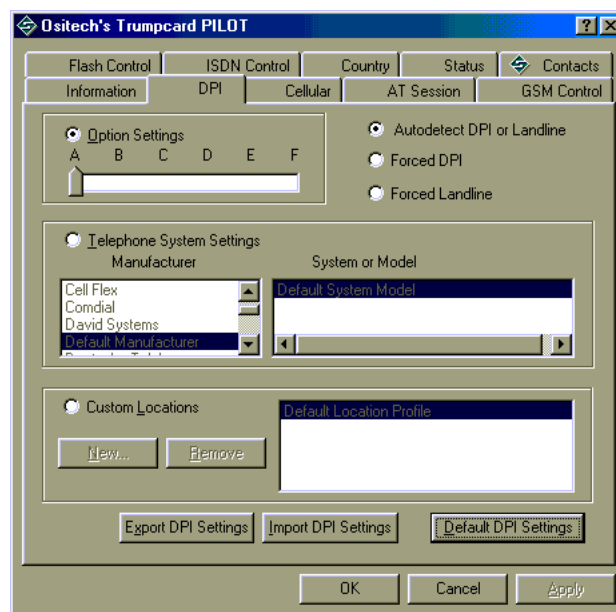


Figure 5-1: DPI property page

- 4 Identify the manufacturer of the digital (PBX) phone.
- 5 Select Telephone System Settings.
- 6 From the Manufacturer list, select the name of the manufacturer. If necessary, from the System or Model list, select the system or model.
- 7 Click Apply.

The appropriate DPI settings are applied.

- 8 Using your communications software, attempt a DPI modem connection.

If the connection works, the settings are appropriate for this digital (PBX) phone system. If the connection fails, adjust the DPI settings using the Option Settings.

To adjust the DPI settings using the Option Settings:

- 1 Select Option Settings.
- 2 Click and drag the Option Settings slider to an alternate setting.  
In most cases, a DPI setting of “A” or “B” will work. Select whichever setting is not presently selected (If “A” is currently selected, drag the slider to “B”).
- 3 Click Apply. The DPI settings are applied.
- 4 Using your communications software, attempt a DPI modem connection.

If the connection works, the settings are appropriate for this digital (PBX) phone system.

If the connection fails:

- 1 Open the TRUMPCARD PILOT, and click the DPI tab.
- 2 Click and drag the Option Settings slider to a setting other than the initial setting and any subsequent setting you have selected.
- 3 Click Apply. The DPI settings are applied.
- 4 Using your communications software, attempt a DPI modem connection.

If the connection attempt fails, repeat steps 1 through 4 until all the option settings are exhausted. If these attempts fail, contact Ositech’s Technical Support department for assistance.

## Using Custom Location Profiles

Custom location profiles are a group of DPI settings associated with a location. If you regularly use a specific digital phone system at a given location (e.g., your client’s office), you can create a custom location profile associated with the phone and location. This way, the next time you visit the location, you can select the custom location profile and then make modem connections.

You can import and export custom location profiles.

### Creating Custom Location Profiles

To create a custom location profile:

- 1 Use the procedures outlined in Adjusting the DPI Settings to adjust the DPI settings for the digital phone system to which your modem is currently connected.
- 2 Open the TRUMPCARD PILOT DPI property page.

- 3 Click New... The New DPI Location window opens.

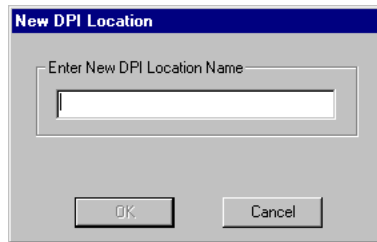


Figure 5-2: New DPI Location window

- 4 Enter a name for the new Custom Location profile (e.g., Company ABC's meeting room), and click OK.

The new custom location profile name appears in the Custom Location Profiles list.

#### Selecting a Custom Location Profile

To select a custom location profile:

- 1 Open the TRUMPCARD PILOT.
- 2 Click the DPI tab to display the DPI property page.
- 3 From the Custom Location Profiles list, select a profile.
- 4 Click Apply. The DPI settings associated with the custom location profile are applied.

#### Importing and Exporting Custom Locations

You can import and export custom location profiles.

To import a custom location profile:

- 1 Open the TRUMPCARD PILOT.
- 2 Click the DPI tab to display the DPI property page.
- 3 Click Import DPI Settings. The Import DPI Profile Location window opens.

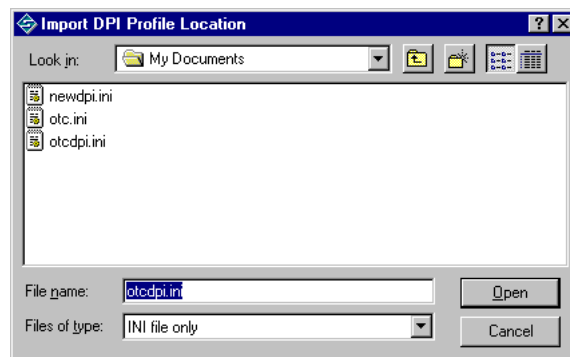


Figure 5-3: Import DPI Profile Location window

- 4 Select the file to import, and click Open. The custom location profiles are imported from the selected location. A backup copy of the original `otcdpi.ini` file is stored in the same location as the file being imported.

To export a custom location profile:

- 1 Open the TRUMPCARD PILOT.
- 2 Click the DPI tab to display the DPI property page.
- 3 Click Export DPI Settings. The Export DPI Profile Location window opens.

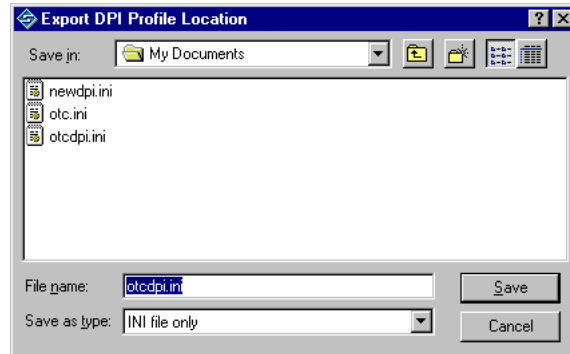


Figure 5-4: Export DPI Profile Location window

- 4 Select a location, and click Save. The custom location profiles are exported to the location you specified.

#### Removing a Custom Location Profile

To remove a custom location profile:

- 1 Open the TRUMPCARD PILOT.
- 2 Click the DPI tab to display the DPI property page.
- 3 From the Custom Location Profiles list, select a profile.
- 4 Click Remove. The DPI settings associated with the custom location profile are deleted.

## Setting the Cellular Properties

This control is only available once you have upgraded your Jack of Spades PC Card for cellular operation.

In the Cellular property page, you can check what cellular driver is selected, and change the driver if required. To select the cellular driver most appropriate for your cellular phone:

- 1 Click the Ositech logo located in the right corner of the system menu.
- 2 From the pop-up menu, select Ositech JoS 56K DPI Modem. The TRUMPCARD PILOT opens.

- 3 Click the Cellular tab. The Cellular property page opens.

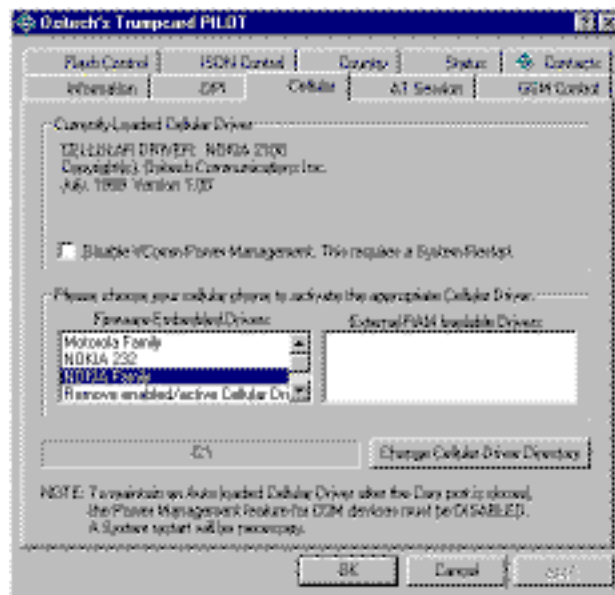


Figure 5-5: Cellular property page

- 4 From the Firmware Embedded Drivers list, select the most appropriate driver for your cellular phone.
- 5 Click Apply. The cellular driver is changed.
- 6 To verify that the cellular driver is loaded, click the AT Session tab to view the AT Session property page.
- 7 Type `at+i` and press Enter. The Jack of Spades PC Card responds with the cellular driver information.

## Setting the GSM Properties

This control is only available once you have upgraded your Jack of Spades PC Card for GSM operation.

In the GSM Control property page, you can select the GSM driver most appropriate for your GSM phone to enable GSM service. You can also disable GSM service.

To view the GSM Control property page:

- 1 Click the Ositech logo located in the right corner of the system menu.
- 2 From the pop-up menu, select Ositech JoS 56K DPI Modem. The TRUMPCARD PILOT opens.



- 3 Click the GSM Control tab. The GSM Control property page opens.

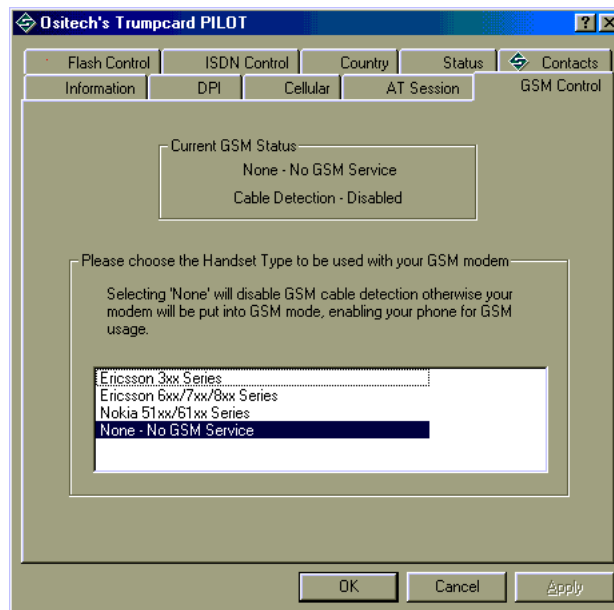


Figure 5-6: GSM Control property page

To enable GSM service:

- 1 From the list of available GSM drivers, select the most appropriate one for your GSM phone.
- 2 Click Apply. The GSM driver is loaded and GSM service is enabled.

To disable GSM service:

- 1 From the list of available GSM drivers, select None - No GSM Service.
- 2 Click Apply. GSM service is disabled.

## Configuring the ISDN Adapter

The ISDN adapter has unique setup requirements in North America vs. International. Thus, your setup will vary depending on which adapter you are using (International adapter or the North American adapter).

You must connect the ISDN pod to the PC Card before you insert the JoS PC Card into your laptop. If your JoS PC Card is already inserted, go to the Status property page and turn off the JoS PC Card. Then, eject the card, attach the ISDN pod, and re-insert the JoS PC Card.

## Configuring the ISDN Adapter

Determine which ISDN adapter you have and follow the appropriate procedure.

### International

If you have an International ISDN adapter, follow these steps to configure the adapter:

- 1 Click the Ositech logo located in the right corner of the system menu.
- 2 From the pop-up menu, select the modem. The TRUMPCARD PILOT opens. Click the ISDN Control tab to display the ISDN Control property page.

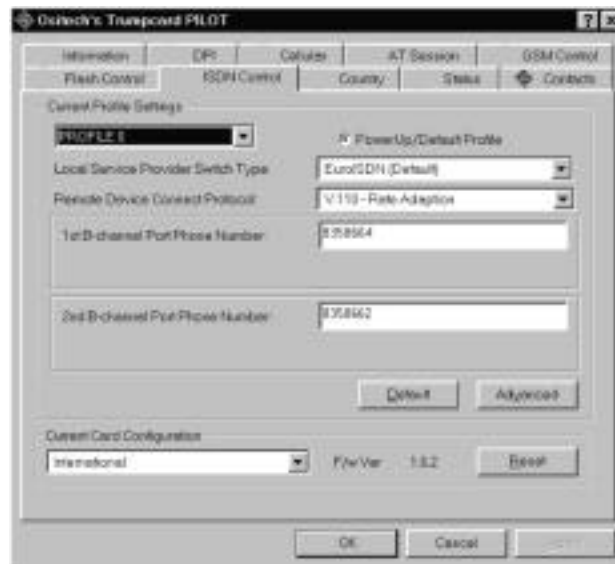


Figure 5-7: International ISDN Control property page

- 3 Select a profile (usually PROFILE 0 to start).
- 4 If this is the profile you want used as the default when the computer starts up, click the Power Up Default Profile radio button.
- 5 Specify the Local Service Provider Switch Type. TRUMPCARD PILOT normally auto-detects the switch type. If it does not, select the switch type from the drop list.
- 6 Specify the Remote Device Connect Protocol. Use V.110, PPP, or MLPPP. Before using MLPPP, ensure that the remote server supports it.
- 7 Enter the 1st B-channel Port Phone Number.
- 8 Enter the 2nd B-channel Port Phone Number.
- 9 Click the Advanced button to change some advanced settings such as DOV and billing intervals if required.
- 10 Click Apply.



When using the ISDN adapter with a V.110 application, the Disconnect button will not work to disconnect the call. To disconnect the call, you must type `Shift+++` to escape to command mode and then type `ath`.

#### North American

If you have a North American ISDN adapter, follow these steps to configure the adapter:

- 1 Click the Ositech logo located in the right corner of the system menu.
- 2 From the pop-up menu, select the modem. The TRUMPCARD PILOT opens. Click the ISDN Control tab to open the ISDN Control property page.

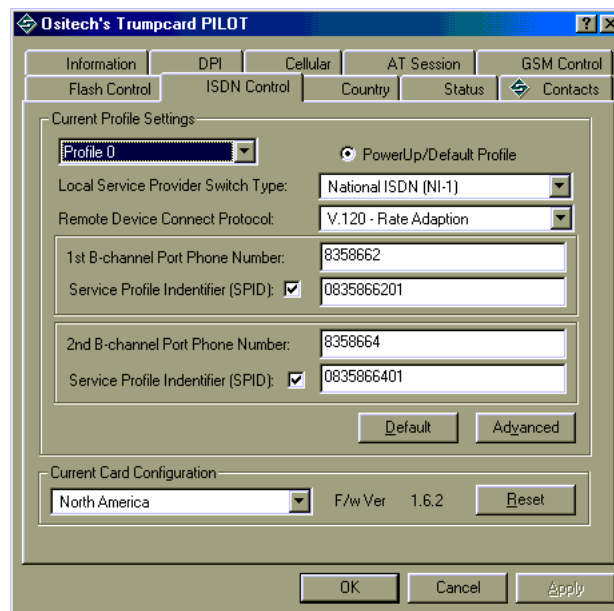


Figure 5-8: North American ISDN Control property page

- 3 Select a profile (usually PROFILE 0 to start).
- 4 If this is the profile you want used as the default when the computer starts up, click the Power Up Default Profile radio button.
- 5 Specify the Local Service Provider Switch Type. TRUMPCARD PILOT normally auto-detects the switch type. If it does not, select the switch type from the drop list. In North America, National ISDN-1 is commonly used.
- 6 Specify the Remote Device Connect Protocol. In North America, use V.120, PPP, or MLPPP. Before using MLPPP, ensure that the remote server supports it.
- 7 Enter the 1st B-channel port phone number.
- 8 Enter the first service profile identifier (SPID).
- 9 Enter the 2nd B-channel port phone number, if applicable.
- 10 Enter the second service profile identifier (SPID), if applicable.

- 11 Click the Advanced button to change any advanced settings such as DOV and billing intervals, if required.
- 12 Click Apply.



When using the ISDN adapter with a V.120 application, the Disconnect button will not work to disconnect the call. To disconnect the call, you must type `Shift+++` to escape to command mode and then type `ath`.

## Making an ISDN Call

You can use any data communication software you like, provided that it supports ISDN connections. Follow the instructions provided with the communication software.

## Setting the Country Profile

This control is only available with the International version of the Jack of Spades PC Card.

In the Country property page, you can set the appropriate modem command set for various countries. To view the Country property page:

- 1 Click the Ositech logo located in the right corner of the system menu.
- 2 From the pop-up menu, select Ositech JoS 56K DPI Modem. The TRUMPCARD PILOT opens.
- 3 Click the Country tab. The Country property page opens.



Figure 5-9: Country property page

- 4 From the drop-down list, select the country. Click Apply. The configuration process might take up to one minute.

## Setting Power Management

In the Status property page, you can turn off the power to the Jack of Spades PC Card and conserve your laptop's battery power. Also, you can select which serial driver to use.

To view the Status property page:

- 1 Click the Ositech logo located in the right corner of the system menu.
- 2 From the pop-up menu, select Ositech JoS 56K DPI Modem. The TRUMPCARD PILOT opens.
- 3 Click the Status tab. The Status property page opens.

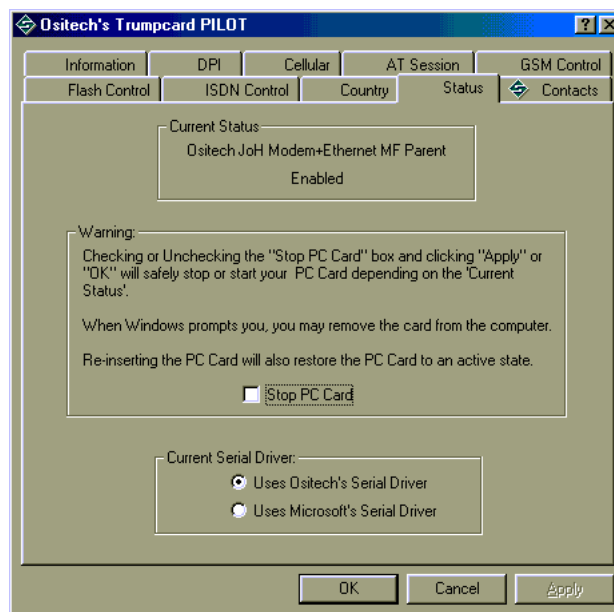


Figure 5-10: Status property page

To turn off the power to the Jack of Spades PC Card:

- 1 Click the Stop PC Card checkbox. A check mark appears in the check box.
- 2 Click Apply. The power to the PC Card is turned off. When prompted, you can remove your Jack of Spades PC Card.

To turn on the power to the Jack of Spades PC Card:

- Eject and then re-insert the Jack of Spades PC Card.

You can use either Ositech's or Microsoft's serial driver. We recommend you use Ositech's. The Status property page displays the current serial driver.

To select a serial driver for the Jack of Spades PC Card:

- 1 In the Current Serial Driver section, click the radio button beside the serial driver you want to use.
- 2 Click Apply. The selected serial driver is applied.

## Sending AT Commands to the PC Card

In the AT Session property page, you can send AT commands directly to your Jack of Spades PC Card. For instance, you can check the modem firmware version.

To view the AT Session property page:

- 1 Click the Ositech logo located in the right corner of the system menu.
- 2 From the pop-up menu, select Ositech JoS 56K DPI Modem. The TRUMPCARD PILOT opens.
- 3 Click the AT Session tab. The AT Session property page opens.

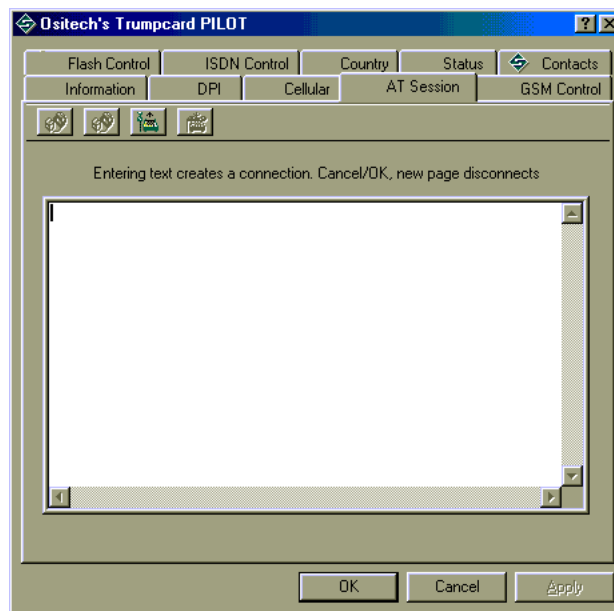


Figure 5-11: AT Session property page

To send AT commands directly to your Jack of Spades PC Card:

- 1 Click in the window.
- 2 Type an AT command. For instance, to check the modem firmware version, type `at+i3`. In some instances, you must follow a command with a carriage return (ASCII 013). In this example, the modem responds with the firmware version.

[Click here to learn more about AT commands.](#)

## Using the Contacts Property Page

In the Contacts property page, you can send email to Ositech's Sales and Technical Support departments. Also, you can automatically launch your default web browser to visit Ositech's website, and link directly to Ositech's Software/Driver Library to check for software updates.

To view the Contacts property page:

- 1 Click the Ositech logo located in the right corner of the system menu.
- 2 From the pop-up menu, select Ositech JoS 56K DPI Modem. The TRUMPCARD PILOT opens.
- 3 Click the Contacts tab. The Contacts property page opens.

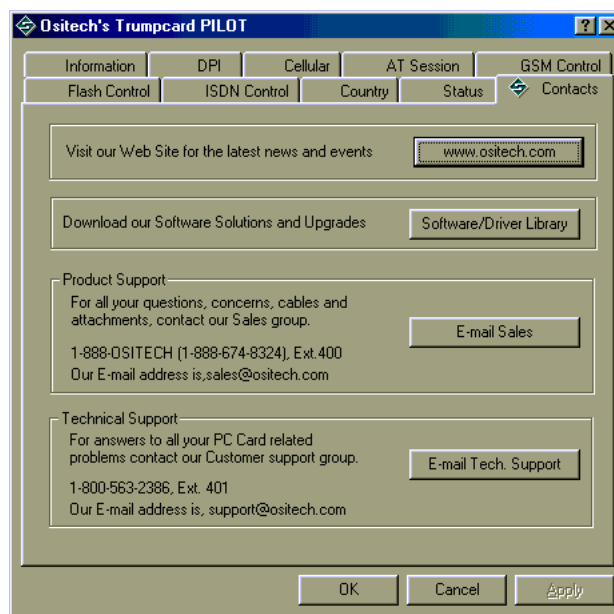


Figure 5-12: Contacts property page

- To view Ositech's website, click [www.ositech.com](http://www.ositech.com).
- To check for software or driver updates, click Software/Driver Library.
- To email Ositech's Sales department, click E-mail Sales.
- To email Ositech's Technical Support department, click E-mail Tech Support.





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# Chapter 6: About the Internet

This section covers:

- Learning about the Internet
  - Accessing the Internet
  - Visiting Ositech's website
- 

## Learning About the Internet

The most common thing people do with modems is connect to the Internet. Using the Internet, you can connect to the World Wide Web and send email. This section explains the Internet and its major components: the World Wide Web, email, newsgroups and FTP.

If you have never used the Internet before, reading this section is a good way to learn about the benefits and pitfalls of the Internet.

## Explaining the Internet

In the late 1960's, the US government established a means by which its various computer networks could exchange information. To streamline this process, a communications standard, called Internet Protocol (IP), was developed. This protocol provided a practical way for computers, built by various manufacturers, to communicate.

The Internet is composed of millions of computers, worldwide, which communicate using the Internet Protocol. No one country, government, corporation, or organization owns the Internet.

The major components of the Internet include: the World Wide Web, email, newsgroups, and FTP.

### World Wide Web

The World Wide Web is a hypertext system which uses the Internet as its global link. The basic language of the Web is HyperText Markup Language (HTML). HTML files organize information into various pages which contain links to other pages. Using links, you can jump from one topic to another.

A group of HTML documents representing a group, organization or individual, are often referred to as a website. Websites are denoted by their address, called a Universal Resource Locator, or URL. Ositech's website URL is [www.ositech.com](http://www.ositech.com).

Websites are viewed using a program called a browser. Netscape Navigator™ and Microsoft Internet Explorer™ are Web browsers. Browsers use Internet Protocols to send and receive data, and then display the data using HTML.

## Email

Electronic mail, or email, much like its paper cousin, is a way of conversing or exchanging information. You can attach files, such as pictures or documents, to email messages.

Here are some pitfalls to consider when sending email:

- Use humor with caution – In email, what is sent as humor can be read as criticism. Ensure you clarify the intent of your message and avoid humor with people you do not know well.
- Avoid sending statements regarding controversial subjects or explicit jokes – Simple remarks can spark angry reactions. Be careful when discussing sensitive topics. Also, if you send jokes, ensure the recipient appreciates the humor and does not feel harassed by the jokes.
- Avoid sending large file attachments – Large file attachments can dramatically slow the email delivery process. In some cases, large files will not be delivered to your intended recipient.

## Newsgroups

Newsgroups are public forums designed for the exchange of information. Most newsgroups have specific topics. Everyone is welcome to read the messages and respond to them. Web browsers can access newsgroups.

Before you respond to messages posted on the newsgroup, ensure you know the rules of the group. Newsgroup rules are usually posted regularly.

## FTP

FTP (File Transfer Protocol) enables you to retrieve images, movies, sound files, application documents and even applications. You can use a web browser to access FTP sites. Often, websites will contain FTP links. When you click on an FTP link, your browser uses the FTP protocol to download the file.

In many cases, files intended for FTP transfer are compressed. Compressing files reduces their size and speeds up the transfer process. If you intend to download FTP files, you will need a compression application, such as Aladdin System's StuffIt™ or Niko Mak Computing's WinZip®, which can uncompress files.

When downloading files from an FTP site, you should consider which one of the following three categories the files fall under and act accordingly:

- Demoware – Companies promote their products by releasing demo versions. These versions often expire after a set amount of times run. Usually, there is no need to pay a licensing fee.
- Shareware – Companies or individuals release full versions of their software as shareware. After you use the software as shareware, you are obligated to pay a

licensing fee (usually quite inexpensive) or destroy the software. Always pay for shareware you continue to use. Never distribute registered copies to anyone.

- Freeware – As the name implies, this software is free—no fees must be paid, and you can distribute copies of the software freely.

## Accessing the Internet

You need to register with an Internet Service Provider (ISP) before you can access the Internet. Internet Service Providers allow you to connect to the Internet.

Internet Service Providers usually charge you a fee on a monthly basis for Internet access. Fees are based on time spent connected to the Internet. Many ISP packages include a set amount of connection time (i.e., 20 hours a month) and then bill you extra for any time over the base amount. Packages and fees vary.

## Using Caution with the Internet

Use the same common sense with the Internet as you do when interacting with people in your work and personal life.

Here are some simple guidelines:

- Parents should monitor their children's activities on the Internet – While the Internet is an international means of exchanging ideas, many websites and newsgroups include controversial topics, or contain explicit (sexual or violent) material.
- Do not believe everything you read – It is difficult to assess the validity or credentials of someone you are conversing with on the Internet. Moreover, websites representing a certain view, or presenting facts are not controlled by any governing organization.
- Be careful making purchases – Many companies offer products for purchase from their website. Internet transactions are usually made by credit card. Many websites use security measures which protect your credit card information. Always check the credit card security available at a website before making a purchase.
- Remember, you never know with whom you are actually dealing – There is no way to truly know with whom you are communicating over the Internet. Never give out personal information, such as your address or financial information.

## Searching the Internet

You can use a search engine to look for a particular website or a specific topic. The following are websites which provide search facilities:

AltaVista	<a href="http://www.altavista.digital.com">www.altavista.digital.com</a>
DejaNews	<a href="http://www.dejanews.com">www.dejanews.com</a>
HotBot	<a href="http://www.hotbot.com">www.hotbot.com</a>
InfoSeek	<a href="http://www.infoseek.com">www.infoseek.com</a>

Lycos	<a href="http://www.lycos.com">www.lycos.com</a>
Northern Light	<a href="http://www.northernlight.com">www.northernlight.com</a>
WebCrawler	<a href="http://www.webcrawler.com">www.webcrawler.com</a>
Yahoo!	<a href="http://www.yahoo.com">www.yahoo.com</a>

To search for a particular website or a specific topic, you enter a key phrase, such as art. The search engine retrieves websites which match or include your key phrase. A generic topic such as art, will yield tens of thousands of website addresses. By narrowing your key phrase to renaissance art, the yield might be in the thousands.

## Visiting the Ositech Website

When you visit the Ositech website at [www.ositech.com](http://www.ositech.com) you can:

- Register your Jack of Spades.
- Get the latest software and documentation updates for your Jack of Spades.
- Learn about new products and accessories.

Our website also contains links to PC Card technology related websites:

- PCMCIA organization home page
- 56K technology
- PC Card related newsgroups
- Notebook vendors

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# Chapter 7: AT Command Reference

This section describes the AT commands that the modem supports, including the parameters, default settings, and result codes. Facsimile commands are also given.

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## Overview

This section describes AT commands the Jack of Spades supports. This information includes command descriptions, parameters, result codes and default settings.

AT commands cannot be entered or sent to the modem from the operating system command line. You must use a communications software package to communicate with the Jack of Spades. Your communications software might handle all of the communications with the modem—you might never have to issue an AT command yourself. Refer to your communications software documentation for more information.

This section also includes a list of S registers and their default settings.

At the end of the section is a list of facsimile commands the modem supports. These commands appear for reference only—you cannot operate fax modem functions manually.

This section covers the following:

- Modem Commands
- DPI Commands Summary
- MNP 10 Commands Descriptions
- AT Commands Summary
- W-Class Commands Descriptions
- AT Commands Descriptions
- Caller ID Commands Descriptions
- AT& Commands Descriptions
- Modem S Registers
- Error Detection and Data Compression Commands Descriptions
- AT% Commands Descriptions
- Default Register Settings
- AT\ Commands Descriptions
- Facsimile Commands
- AT+ Commands Descriptions
- Class 1 Commands
- AT- Command Description
- Class 2 Commands

## Modem Commands

For each modem command description there is a default setting. The modem loads the default values at initialization (when you turn the computer's power on or you issue the

ATZ command). If you exclude a mandatory parameter, the modem assumes a zero value. Invalid commands or parameters return the **ERROR** message.

The command line contains a single command or a series of commands. You can separate commands with a space for readability, but the command line cannot exceed 66 characters. The modem performs the command after you send a terminating character. The default terminator is carriage return (ASCII 013), but you can change this by writing to register S3.

You can edit the command line using the backspace character (ASCII 008) or change this by writing to register S5. The backspace cannot be 0, greater than 127 or the terminating character in the command line.

All command lines begin with AT (in capital or lower case letters). A command line can be terminated at any time by issuing CTRL-X (ASCII 018). The modem will ignore the command line and return an **OK** message. You can use A/ to repeat the last command line. The A/ does not require a terminating character.

An escape code sequence (+++) returns the modem to the command mode from data mode. There must be a time delay between the last character transmitted and the first character of the escape code. You can change the delay by writing to register S12; (default 1 second). The escape code character must occur three times in succession for an escape.

Parameters that are entered for the AT and the AT& commands are limited in value to 0-255; the parameter is "MOD"ed with 256. The result must be within the specified range; if it is not, the modem returns an **ERROR** message.

Parameters entered for an S register are also "MOD"ed with 256. Parameters that are out of range are stored in the S register; however, no error message is reported. Functionally the lower or higher register limit is used.

If you enter an out of range parameter for the AT\ or AT% commands, the upper limit is stored and no error message is reported.

Following the modem command description assume **OK** and **ERROR** as valid responses for almost all of the commands. Other valid responses for a command, if any, are discussed with the command descriptions.

To revert to the factory default settings, type `at&f&w`.

## DPI Commands Summary

The section summarizes the AT commands you can use to adjust various DPI settings. All settings are stored in the modem's NVRAM and are retained until you again change them—turning the modem on or off, or moving the modem to another computer will not restore these settings to their factory default.

A description of the AT%O parameters are not listed since they refer to Rx and Tx level settings for digital phone systems. We recommend that you adjust these settings using the TRUMPCARD PILOT.

Command	Function	Default	Parameters
AT%G	Display current DPI setting.	None	None
AT%GA	Set DPI dialing mode.	0	0=manual
AT%GD	Reset DPI default.	None	None
AT%Ox	Set DPI option settings.	A	A, B, C, D, E, F
AT%Bx	Set DPI Assistant support.	1	0=turn off DPI Assistant 1=turn on DPI Assistant ?=report on DPI Assistant
AT%Yn	Set DPI mode.	0	0=auto detect DPI/Landline 1=force DPI mode 2=force landline mode ?=report on detection mode

You should only use the AT%B0 command when the DPI Assistant popping-up obscures some necessary part of the display (e.g., during a presentation). The AT%Yx command should only be used in the rare occurrence when the modem cannot properly detect the dialing mode.

## AT Commands Summary

Command	Function
A	Go off-hook and attempt to answer a call.
A/	Re-execute command.
AT=x	Write to selected S-Register.
AT?	Display value in selected S-Register
B0	Select V.22 connection at 1200 bps.
B1	Select Bell 212A connection at 1200 bps.
C1	Return OK message.
Dn	Dial number.
E0	Turn off command echo.
E1	Turn on command echo.
H0	Initiate a hang-up sequence.
H1	If on-hook, go off-hook and enter command mode.
I0	Report product code.

I1	Report pre-computed checksum.
I2	Report OK.
I3	Report firmware revision, model, and interface type.
I4	Report response programmed by an OEM.
I5	Report the country code parameter.
I6	Report modem data pump model and code revision.
I7	Reports the DAA code (W-class models only).
L0	Set low speaker volume.
L1	Set low speaker volume.
L2	Set medium speaker volume.
L3	Set high speaker volume.
M0	Turn speaker off.
M1	Turn speaker on during handshaking and turn speaker off while receiving carrier.
M2	Turn speaker on during handshaking and while receiving carrier.
M3	Turn speaker off during dialing and receiving carrier and turn speaker on during answering.
N0	Turn off automode detection.
N1	Turn on automode detection.
O0	Go on-line.
O1	Go on-line and initiate a retrain sequence.
P	Force pulse dialing.
Q0	Allow result codes to DTE.
Q1	Inhibit result codes to DTE.
Sn	Select S-Register as default.
Sn?	Return the value of S-Register n.
Sn=v	Set default S-Register to value v.
?	Return the value of default S-Register.
T	Force DTMF (tone) dialing.
V0	Report short form (terse) result codes.
V1	Report long form (verbose) result codes.
W0	Report DTE speed in EC mode.
W1	Report line speed, EC protocol and DTE speed.
W2	Report DCE speed in EC mode.
X0	X0 Report basic call progress result codes, i.e., OK, CONNECT, RING, NO CARRIER (also, for busy, if enabled, and dial tone not detected), NO ANSWER and ERROR.



X1	Report basic call progress result codes and connections speeds, i.e., OK, CONNECT, RING, NO CARRIER (also, for busy, if enabled, and dial tone not detected), NO ANSWER, CONNECT XXXX, and ERROR.
X2	Report basic call progress result codes and connections speeds, i.e., OK, CONNECT, RING, NO CARRIER (also, for busy, if enabled, and dial tone not detected), NO ANSWER, CONNECT XXXX, and ERROR.
X3	Report basic call progress result codes and connection rate, i.e., OK, CONNECT, RING, NO CARRIER, NO ANSWER, CONNECT XXXX, BUSY, and ERROR.
X4	Report all call progress result codes and connection rate, i.e., OK, CONNECT, RING, NO CARRIER, NO ANSWER, CONNECT XXXX, BUSY, NO DIAL TONE and ERROR.
Y0	Disable long space disconnect before on-hook.
Y1	Enable long space disconnect before on-hook.
Z0	Restore stored profile 0 after warm reset.
Z1	Restore stored profile 1 after warm reset.
&C0	Force RLSD active regardless of the carrier state.
&C1	Allow RLSD to follow the carrier state.
&D0	Interpret DTR ON-to-OFF transition per &Qn: &Q0, &Q5, &Q6 – the modem ignores DTR. &Q1, &Q4 – the modem hangs up. &Q2, &Q3 – the modem hangs up.
&D1	Interpret DTR ON-to-OFF transition per &Qn: &Q0, &Q1, &Q4, &Q5, &Q6 – Asynchronous escape. &Q2, &Q3 – the modem hangs up.
&D2	Interpret DTR ON-to-OFF transition per &Qn: &Q0 through &Q6 – the modem hangs up.
&D3	Interpret DTR ON-to-OFF transition per &Qn: &Q0, &Q1, &Q4, &Q5, &Q6 – the modem performs soft reset. &Q2, &Q3 – the modem hangs up.
&F0	Restore factory configuration 0.
&F1	Restore factory configuration 1.
&G0	Disable guard tone.
&G1	Disable guard tone.
&G2	Enable 1800 Hz guard tone.
&J0	Set S-Register response only for compatibility.
&J1	Set S-Register response only for compatibility.

&K0	Disable DTE/DCE flow control.
&K3	Enable RTS/CTS DTE/DCE flow control.
&K4	Enable XON/XOFF DTE/DCE flow control.
&K5	Enable transparent XON/XOFF flow control.
&K6	Enable both RTS/CTS and XON/XOFF flow control.
&L0	Select dial up line operation.
&M0	Select direct asynchronous mode.
&M1	Select sync connect with async off-line command mode. *
&M2	Select sync connect with async off-line command mode and enable DTR dialing of directory zero. *
&M3	Select sync connect with async off-line command mode and enable DTR to act as Talk/Data switch. *
&P0	Set 10 pps pulse dial with 39%/61% make/break.
&P1	Set 10 pps pulse dial with 33%/67% make/break.
&P2	Set 20 pps pulse dial with 39%/61% make/break.
&P3	Set 20 pps pulse dial with 33%/67% make/break.
&Q0	Select direct asynchronous mode.
&Q1	Select sync connect with async off-line command mode. *
&Q2	Select sync connect with async off-line command mode and enable DTR dialing of directory zero. *
&Q3	Select sync connect with async off-line command mode and enable DTR to act as Talk/Data switch. *
&Q4	Select Hayes AutoSync mode.
&Q5	Modem negotiates an error corrected link.
&Q6	Select asynchronous operation in normal mode.
&R0	CTS tracks RTS (async) or acts per V.25 (sync).
&R1	CTS is always active.
&S0	DSR is always active.
&S1	DSR acts per V.25.
&T0	Terminate any test in progress.
&T1	Initiate local analog loopback.
&T2	Returns ERROR result code.
&T3	Initiate local digital loopback.
&T4	Allow remote digital loopback.
&T5	Disallow remote digital loopback request.
&T6	Request an RDL without self-test.
&T7	Request an RDL with self-test.

&T8	Initiate local analog loop with self-test.
&V	Display current configurations.
&V1	Display connection statistics.
&W0	Store the active profile in NVRAM profile 0.
&W1	Store the active profile in NVRAM profile 1.
&X0	Select internal timing for the transmit clock.
&X1	Select external timing for the transmit clock.
&X2	Select slave receive timing for the transmit clock.
&Y0	Recall stored profile 0 upon power up.
&Y1	Recall stored profile 1 upon power up.
&Zn=x	Store dial string x (to 34) to location n (0 to 3).
%E0	Disable line quality monitor and auto retrain.
%E1	Enable line quality monitor and auto retrain.
%E2	Enable line quality monitor and fallback/fall forward.
%L	Return received line signal level.
%Q	Report the line signal quality.
%7	Plug and Play serial number.
%8	Plug and Play vendor ID and product number.
\Kn	Controls break handling during three states:
State 1	Modem receives a break from the DTE:
\K0,2,4	Enter on-line command mode, no break sent to the remote modem.
\K1	Clear buffers and send break to remote modem.
\K3	Send break to remote modem immediately.
\K5	Send break to remote modem in sequence with transmitted data.
State 2	When modem receives \B in on-line command state:
\K0,1	Clear buffers and send break to remote modem.
\K2,3	Send break to remote modem immediately.
\K4,5	Send break to remote modem in sequence with transmitted data.
State 3	When modem receives break from the remote modem:
\K0,1	Clear data buffers and send break to DTE.
\K2,3	Send a break immediately to DTE.
\K4,5	Send a break with received data to the DTE.
\N0	Select normal speed buffered mode.

\N1	Select direct mode.
\N2	Select reliable link mode.
\N3	Select auto reliable mode.
\N4	Force LAPM mode.
\N5	Force MNP mode.
\V0	Connect messages are controlled by the command settings X, W, and S95.
\V1	Connect messages are displayed in the single line format.
+MS	Select modulation.
+H0	Disable RPI/Video Ready Mode.
+H1	Enable RPI and set DTE speed to 19200 bps.
+H2	Enable RPI and set DTE speed to 38400 bps.
+H3	Enable RPI and set DTE speed to 57600 bps.
+H11	Enable RPI+ mode.
+H16	Enable Video Ready Mode.
**0	Download to flash memory at last sensed speed.
**1	Download to flash memory at 38.4 kbps.
*2	Download to flash memory at 57.6 kbps.
-SDR=0	Disable Distinctive Ring.
-SDR=1	Enable Distinctive Ring Type 1.
-SDR=2	Enable Distinctive Ring Type 2.
-SDR=3	Enable Distinctive Ring Type 1 and 2.
-SDR=4	Enable Distinctive Ring Type 3.
-SDR=5	Enable Distinctive Ring Type 1 and 3.
-SDR=6	Enable Distinctive Ring Type 2 and 3.
-SDR=7	Enable Distinctive Ring Type 1, 2, and 3.
Error Detection and Data Compression Commands	
%C0	Disable data compression.
%C1	Enable MNP 5 data compression.
%C2	Enable V.42 bis data compression.
%C3	Enable both V.42 bis and MNP 5 compression.
\A0	Set maximum block size in MNP to 64.
\A1	Set maximum block size in MNP to 128.
\A2	Set maximum block size in MNP to 192.
\A3	Set maximum block size in MNP to 256.
\Bn	Send break of n x 100 ms.

MNP 10 Commands	
)M0	No transmit level; transmit level is fixed at –10dBm.
)M1	Adjust the transmit level during retrain speed shift.
-K0	Disable MNP 10 extended services.
-K1	Enable MNP 10 extended services.
-K2	Enable MNP 10 extended services detection only.
-SEC=0	Disable MNP 10EC.
-SEC=1, [<tx level>]	Enable MNP 10EC and set transmit level <tx level> 0 to 30 (0 dBm to -30 dBm).
@Mn	Set initial upshift power level.
:E0	Disable V.32 compromise equalizer.
:E1	Enable V.32 compromise equalizer.
W-Class Commands	
*B	Display list of permanently blacklisted numbers.
*D	Display list of delayed numbers.
*NCn	Change country to one of eight in NVRAM.
Caller ID Commands	
#CID=0	Disable Caller ID.
#CID=1	Enable Caller ID with formatted presentation.
#CID=2	Enable Caller ID with unformatted presentation.
Fax Class 1 Commands	
+FCLASS=n	Service class.
+FAE=n	Data/fax auto answer.
+FRH=n	Receive data with HDLC framing.
+FRM=n	Receive data.
+FRS=n	Receive silence.
+FTH=n	Transmit data with HDLC framing.
+FTM=n	Transmit data.
+FTS=n	Stop transmission and wait.
Fax Class 2 Commands	
+FCLASS=n	Service class.
+FAA=n	Adaptive answer.
+FAXERR	Fax error value.
+FBOR	Phase C data bit order.
+FBUF?	Buffer size (read only).
+FCFR	Indicate confirmation to receive.

+FCLASS=	Service class.
+FCON	Facsimile connection response.
+FCIG	Set the polled station identification.
+FCIG:	Report the polled station identification.
+FCR	Capability to receive.
+FCR=	Capability to receive.
+FCSI:	Report the called station ID.
+FDCC=	DCE capabilities parameters.
+FDCS:	Report current session.
+FDCS=	Current session results.
+FDIS:	Report remote capabilities.
+FDIS=	Current sessions parameters.
+FDR	Begin or continue phase C receive data.
+FDT=	Data transmission.
+FDTC:	Report the polled station capabilities.
+FET:	Post page message response.
+FET=N	Transmit page punctuation.
+FHNG	Call termination with status.
+FK	Session termination.
+FLID=	Local ID string.
+FLPL	Document for polling.
+FMDL?	Identify model.
+FMFR?	Identify manufacturer.
+FPHCTO	Phase C time out.
+FPOLL	Indicates polling request.
+FPTS:	Page transfer status.
+FPTS=	Page transfer status.
+FREX?	Identify revision.
+FSPL	Enable polling.
+FTSI:	Report the transmit station ID.

## AT Commands Descriptions

The Jack of Spades will respond to the commands detailed below. Parameters applicable to each command are listed with the command description. The defaults shown for each configuration command are those used in the Ositech factory profile.

## A – Answer

**Function** – The modem goes off-hook and attempts to answer an incoming call (if correct conditions are met). Upon successful completion of the answer handshake, the modem goes on-line in answer mode.

This command may be affected by the state of Line Current Sense, if enabled. (Most countries do not require Line Current Sense.) Operation is also dependent upon +FCLASS command and country-specific requirements.

If +FCLASS=0 is selected, the modem enters the connect state after exchanging a carrier with the remote modem. If no carrier is detected within a period specified in register S7 (default = 30 seconds), the modem hangs up. Any character entered during the connect sequence aborts the connection attempt.

If +FCLASS=1 or 2 is selected, the modem goes off-hook in V.21 answer mode. The modem generates the V.21 2100 Hz answer tone for  $3 \pm 0.5$  seconds and, following a delay of 70 ms, will proceed as if the +FTH=3 command was issued. Up to (but excluding) the +FTH=3 command state, any character aborts the connection. (See the description of the +FTH command for details.)

**Purpose** – Use this command to answer an incoming modem call.

**Parameters** – None.

**Default** – None.

**Syntax** – Any character entered during the connection sequence aborts the connection.

## A/ – Re-execute Command

**Function** – Re-executes the most recent AT command string. "A/" repeats all commands in the command buffer. The command executes as soon as / is entered.

**Purpose** – Use this command to place another call (using the Dial command) that failed to connect due to a busy line, no answer or wrong number.

**Parameters** – None.

**Default** – None.

**Syntax** – This command must appear alone on a command line and be terminated by the / character. Do not terminate this command with a carriage return.

**Result Codes** –

Connect XXXX      (XXXX denotes the line speed, e.g. 2400)

No CARRIER      A character was entered aborting the connection.

The connection was not established before the S7-Register expired.

## AT=x – Write to Selected S-Register

**Function** – This command writes the value x to the currently selected S-Register. Use the ATSn to select an S-Register. All of the S-Registers will return the OK response if x is a number. Some registers cannot be written due to country-specific PTT limitations.

**Purpose** – Use this command to set the value stored in the selected S-Register.

**Parameters** – Specific to each S-Register.

**Default** – Specific to each S-Register.

**Syntax** – AT=x (x is the variable you wish to change)

**Result Codes** –

OK                      For all arguments

## AT? – Read Selected S-Register

**Function** – This command reads and displays the selected S-Register. Use the ATSn command to select an S-Register.

**Purpose** – Use this command to view the value stored in the selected S-Register.

**Parameters** – Specific to each S-Register.

**Default** – Specific to each S-Register.

**Syntax** – AT?

**Result Codes** –

OK                      For all arguments

## Bn – CCITT or Bell

**Function** – You can select either Bell or CCITT modulation for a line speed connection of 300 or 1200 bps. Any other line speed will use a CCITT modulation standard. The parameter value, if valid, is written to register S27 bit 6. (See also ATFn command.)

**Purpose** – Use this command to configure modulation settings for line speed connections of 300 or 1200 bps.

**Parameters** –

0	Selects CCITT operation at 300 or 1200 bps during Call Establishment and subsequent connections.
1	Selects BELL operation at 300 or 1200 bps during Call Establishment and subsequent connections.

**Default** –

**Syntax** – ATB0 or ATB1



Result Codes –

OK	n = 0 or 1
ERROR	Any other condition

## Cn – Carrier Control

Function – This command is included for compatibility testing only and is for manufacturer use.

Purpose – Manufacturers use this to confirm compatibility with a result code "1".

Parameters – 1

Default – None

Syntax – ATC1

Result Codes –

OK	n = 1
ERROR	Any other condition

## Dn – Dial

Function – This command directs the modem to go on-line, dial according to the string entered and attempt to establish a connection. If no dial string is supplied, the modem will go on-line and attempt the handshake in originate mode. In W-class models, the action of going off-hook is affected by the status of the Line Current Sense input; whether or not line current sensing is enabled; and, by the blacklist and delayed list.

If +FCLASS=0 is selected, the modem behaves as a data modem and attempts to connect to another data modem. The modem will have up to the period of time specified by Register S6 or S7 to wait for carrier and complete the handshake. If this time expires before the modem can complete the handshake, the modem will go on-hook with the NO CARRIER response. This command aborts in-progress upon receipt of any DTE character before completion of the handshake.

If +FCLASS=1 or 2 is selected, the modem will behave as a facsimile modem and attempt to connect to a facsimile machine (or modem) by entering the HDLC V.21 channel 2 receive state (as if +FRH=3 had been issued). This command aborts upon receipt of any DTE character if the modem has not finished dialing. In this case, the modem will go on-hook and return to command mode after displaying the NO CARRIER message. If the modem has finished dialing, it proceeds as if the +FRH=3 command has been issued. (Refer to the +FRH command to determine how the modem behaves following this stage.)

If the ATD command is issued before the S1 Register clears, the modem responds with the **NO CARRIER** result code.

Purpose – You can use this command to dial either a modem or fax connection.

Parameters –

0-9	DTMF digits 0 to 9.
*	Enter the asterisk character (tone dialing only).
#	Enter the Pound or Octocet character (the 'gate' digit) (tone dialing only).
A-D	DTMF digits A, B, C, and D. Some countries prohibit the sending of these characters during dialing.
L	Re-dial the last number: the modem will re-dial the last valid telephone number. The L must follow immediately after the D. All following characters ignored.
P	Select pulse dialing: pulse dial the numbers that follow until a 'T' is encountered. Affects current and subsequent dialing. Some countries prevent changing dialing modes after the first digit is dialed. Place this command at the end of the command string and before the dial string.
T	Select tone dialing: tone dial the numbers that follow until a 'P' is encountered. Affects current and subsequent dialing. Some countries prevent changing dialing modes after the first digit is dialed. Place this command at the end of the command string and before the dial string.
R	This command is accepted but causes no action.
S=n	Dial the number stored in the directory (n = 0 to 3). (See &Z.)
!	Flash: the modem goes on-hook for a time defined by the value of Register S29. Country requirements might limit the time imposed.
W	Wait for dial tone: the modem waits for dial tone before dialing the digits following 'W'. If a dial tone is not detected within the time specified by Register S7 (US) or S6 (W-class), the modem aborts the rest of the sequence, returns on-hook and generates an <b>ERROR</b> message.
@	Wait for silence: the modem waits for at least 5 seconds of silence in the call progress frequency band before continuing with the next dial string parameter. If the modem does not detect 5 seconds of silence before the expiration of the call abort timer (S7), the modem terminates the call attempt with a <b>NO ANSWER</b> result code. If busy detection is enabled, the modem might terminate the call with the <b>BUSY</b> result code. If the answer tone arrives during execution of this parameter, the modem starts the handshake sequence.
&	Wait for credit card dialing tone before continuing with the dial string. If the tone is not detected within the time specified by S7 (US models) or S6 (W-class models), the modem aborts the rest of the sequence, returns on-hook and generates an <b>ERROR</b> result code.
,	Dial pause: the modem will pause for a time specified by S8 before

	dialing the digits following the "," character.
;	Return to the command state. Added to the end of a dial string, this causes the modem to return to the command state after it processes the portion of the dial string preceding the ";" character. This allows the user to issue additional AT commands while remaining off-hook. The additional AT commands can be placed in the original command line following the ";" or can be entered on subsequent command lines. The modem enters call progress only after an additional dial command is issued without the ";" terminator. Use "H" to abort the dial in progress, and go back on-hook.
^	Toggles calling tone enable/disable; this command is only applicable to the current dial attempt.
( )	Ignored. You can use parentheses to format the dial string.
-	Ignored. You can use the dash to format the dial string.
<space>	Ignored. You can use a space to format the dial string.
<i>	This is an invalid character and is ignored.
>	If enabled by a country-specific parameter, the modem will generate a grounding pulse on the EARTH relay output.

Syntax – Any valid parameter. Punctuation characters may be used for clarity—parentheses, hyphens and spaces are ignored.

#### Result Codes –

NO DIAL TONE	If X2 or X4 is selected and 1 second of dial tone is not detected within 5 seconds, or if the "W" dial modifier is used and 3 seconds of dial tone is not detected within the time specified in the S7 Register.
BUSY	A busy signal is detected and X3 or X4 is selected, or a dial modifier is used.
NO ANSWER	The "@" dial modifier is used and 5 seconds of silence is not detected within the time specified in the S7 Register.
CONNECT XXXX	A connection is established (XXXX denotes the line speed, e.g. 2400).
NO CARRIER	A connection cannot be established, the abort timer (S&) expires or a character was entered during the handshake.

#### Examples –

ATDT1-888-674-8324	Dialing a long-distance number.
ATDT9,836-8063	Accessing an outside line, inserting a pause and then dialing a local number.
ATDS=2	Dialing the number stored in S2.

## En – Command Echo

Function – The modem enables or disables the echo of characters to the DTE according to the parameter supplied. Valid parameters are stores in S14 bit 1.

Purpose – With the echo enabled, you can view the commands you send to the modem; with echo off, you cannot see commands you send to the modem.

Note – If both the modem and communications software have echo enabled, double characters will appear. If no characters appear, both echoes are off.

Parameters –

0	Disables the command echo.
1	Enables the command echo.

Default – 1

Syntax – ATE0 or ATE1

Result Codes –

OK	n = 0 or 1
ERROR	All other conditions

## Hn – Disconnect (Hang-Up)

Function – This command initiates a hang up sequence. This command may not be available for some countries due to PTT restrictions.

Purpose – You can use this command to hang up.

Parameters –

H0	The modem releases the line if the modem is currently on-line, and terminates any test (at&t) that is in progress. Country specific, modulation specific, and error correction protocol specific (S38) processing are handled outside of the H0 command.
H1	If on-hook, the modem will go off-hook and enter the command mode. For US models, the modem remains off-hook. For W-class models, the modem returns on-hook after a period of time determined by S7.

Default – None

Syntax – ATH0 or ATH1

Result Codes –

OK	n = 0 or 1
ERROR	All other conditions

## In – Identification

**Function** – The modem reports to the DTE the requested result according to the command parameter.

**Purpose** – Use this command to identify the firmware version. You can identify the firmware version and then check Ositech's website for an updated version which you can download. Before calling Ositech's Technical Support department, use the `ati0` command to identify the firmware version—this will reduce the time it takes for an Ositech Technical Support representative to assist you with your modem.

**Parameters** –

- |   |   |
|---|---|
| 0 | Displays the modem firmware version.  |
| 1 | Calculates the ROM checksum and reports the value in the DTE.   |
| 2 | Performs a ROM checksum test and displays either OK or ERROR.   |
| 3 | Reports the firmware version (F), basic model (e.g., V34), application code (A), and interface type code (I) typically in the form VF.FFF-V34_AI. The application codes are: D = Desktop, L = Low Power (PCMCIA). The interface type codes are: S = Serial, P = Parallel.<br>Example: V1.400-V34_DS |
| 4 | Displays the modem's identifier: Ositech 5oH 56K DPI Modem.   |
| 5 | Displays the Country Code, example: 000 (for US or Canada).   |
| 6 | Reports the modem data pump model and internal code revision.<br>Example: RC288DPi Rev 05BA.  |
| 7 | Reports the DAA code resulting from MCU interrogation of the DAA for auto DAA recognition. Examples: 000 for US or Canada, 016 for Japan, 033 for Belgium, 034 for Finland, 035 for France, 037 for Italy, 038 for Netherlands, 039 for Sweden, 040 for Switzerland, and 041 for UK.                |

**Default** – None.

**Syntax** – `ATI0` (yields firmware version)

**Result Codes** –

- |       |                      |
|-------|----------------------|
| OK    | n = 0 to 7           |
| ERROR | All other conditions |

## Ln – Speaker Volume

**Function** – The modem sets the computer speaker volume according to the parameter supplied. Valid parameter values are written to S22 bits 0 and 1.

**Purpose** – Use this command to set the volume on your computer's speaker. This command is for backwards compatibility only. Most computers, not the modem, control the speaker volume. We suggest you set the speaker volume to high before making a DPI

connection—this way, you can hear the modem progress and determine if the DPI connection is being established.

Parameters –

0	Low volume
1	Low volume
2	Medium volume
3	High volume

Default – 1

Syntax – ATL3 (sets the volume to high)

Result Codes –

OK	n = 0 to 3
ERROR	All other conditions

## Mn – Speaker Control

Function – This command selects when the speaker will be on or off. The parameter value, if valid, is written to S22 bits 2 and 3.

Purpose – Use this command to control the speaker during modem connections. We suggest you set the speaker control to “on” before making a DPI connection—this way, you can hear the modem progress and determine if the DPI connection is being established.

Parameters –

0	Speaker is always off.
1	Speaker is on during call establishment, but off when receiving carrier.
2	Speaker is always on.
3	Speaker is off when receiving carrier and during dialing, but on during answering.

Default – 1

Syntax – ATM0 (speaker is always off)

Result Codes –

OK	n = 0 to 3
ERROR	All other conditions

## Nn – Automode Enable

Function – This command enables or disables automode detection. Valid parameter values are written to S31 bit 1.



and S37=x commands override the +MS command settings. When the N0 or N1 command is issued, the +MS subparameters are updated to reflect the Nn and S37 values (see +MS command register). For example:

N1S37=10 updates the +MS command subparameters to reflect +MS=10,1,300,12000

N0S37=10 updates the +MS command subparameters to reflect +MS=10,0,12000,12000

2 Use of the +MS command is recommended instead of the Nn and S37=x commands. Nn and S37=x commands are supported for compatibility with existing communication software.

Purpose – Use this command to enable or disable automode detection.

Parameters –

- |   |   |
|---|---|
| 0 | Automode detection is disabled (equivalent to setting the +MS <automode> subparameter to 0). A subsequent handshake will be conducted according to the contents of S37 or, if S37 is zero, according to the most recently sensed DTE speed.           |
| 1 | Automode detection is enabled (equivalent to setting the +MS <automode> subparameter to 1). A subsequent handshake will be conducted according to the modem automode—according to the contents of S37 or, if S37 is zero, starting at 28800 bps V.34. |

Default – 1

Syntax – ATN1 (enable automode detection)

Result Codes –

- |       |                      |
|-------|----------------------|
| OK    | n = 0 or 1           |
| ERROR | All other conditions |

## On – Return to On-Line Data Mode

Function – This command determines how the modem will enter the on-line data mode. If the modem is in the on-line command mode, the modem enters the on-line data mode with or without a retrain. If the modem is in the off-line command mode (no connection), **ERROR** is reported.

Purpose – If you disconnect from a remote modem and do not enter the ATH (hang-up) command, you can use ato0 to reconnect to the remote modem. This command is also useful during testing since it displays the connection speed when it reconnects.

Parameters –

- |   |   |
|---|---|
| 0 | Enters on-line data mode without a retrain. Handling is determined by the Call Establishment task. Generally, if a connection exists, this command connects the DTE back to the remote modem after an escape (+++). |
| 1 | Enters on-line data mode with a retrain before returning to on-line data mode.  |

Default – None

Syntax – AT00 or AT01

Result Codes –

OK                    n = 0 or 1 and a connection exists.

ERROR                If no connections exists.

## P – Set Pulse Dial Default

Function – This command forces pulse dialing until the next T dial modifier or T command is received. This command sets S14 bit 5. This command may not be permitted in some countries.

Purpose – Use this command to Pulse dial. This command is useful when your phone only supports pulse dialing.

Parameters – None

Default – None

Syntax – ATDP

Result Codes – OK

## Qn – Quiet Results Codes Control

Function – The command enables or disables the sending of result codes to the DTE according to the parameter supplied. The parameter value, if valid, is written to S14 bit 2.

Purpose – Use this command if you do not wish to view AT command result codes.

Parameters –

0                    Enables result codes to the DTE.

1                    Disables result codes to the DTE.

Default – 0

Syntax – ATQ0 or ATQ1

Result Codes –

OK                    n = 0 or 1

ERROR                Otherwise

## Sn=v – Read/Write S-Register

Function – The modem selects an S-Register, performs an S-Register read or write function, or reports the value of an S-Register.



If the value of v is outside the range permitted for a given S-Register the values will still be stored, but functionally the lower and higher limits will be observed. Some S-Registers are read-only.

In some cases, values written to the S-Register appear to be accepted but the values are not actually written. Due to country restrictions, some commands are accepted, but the value might be limited and replaced by a maximum or minimum value.

**Purpose** – Use this command to change the value stores in a particular S-Register.

**Parameters** –

n	Establishes S-Register n as the last accessed register.
n=v	Sets S-Register n to the value v.
n?	Reports the value of S-Register n.

**Default** – None

**Syntax** – The parameter n can be omitted, in which case the last S-Register accessed is assumed. The S can be omitted for AT= and AT?, in which case the last S-Register accessed is assumed. Input and output are always in decimal format.

**Result Codes** –

OK	n and v are within the parameters of the available S-Registers.
ERROR	n is beyond the range of the available S-Registers.

**Example** –

ATS7 establishes S7 as the last accessed register.

AT=40 sets the contents of the last register accessed to 40.

ATS=20 sets the contents of the last register accessed to 20.

## T – Set Tone Dial Default

**Function** – This command forces Tone dialing until the next P dial modifier or P command is received. The modem sets an S-Register bit to indicate that all subsequent dialing should be conducted in tone mode. Note that the DP command overrides this command and clears S14 bit 5.

This command may not be permitted in some countries.

**Purpose** – Use this command to Tone dial. This command is useful when your phone only supports Tone dialing.

**Parameters** – None

**Default** – Tone dialing is the factory default

**Syntax** – ATDT

**Result Codes** – OK

## Vn – Result Code Form

Function – This command selects short-form (numeric) or long-form (words) display of result codes. Valid parameters are written to S14 bit 3.

Purpose – Use this command to toggle between short- and long-form result codes. Since numeric result codes only one or two digits, result codes are useful in modem script files.

Parameters –

- |   |   |
|---|---|
| 0 | Enables short-form result codes. Line feed is not issued before a short-form result code. |
| 1 | Enables long-form result codes.   |

Default – 1

Syntax – ATV0 or ATV1

Result Codes –

- |       |            |
|-------|------------|
| OK    | n = 0 or 1 |
| ERROR | Otherwise  |

## Wn – Connect Message Control

Function – This command controls the format of CONNECT messages. Valid parameters values are written to S31 bits 2 and 3.

Note – You can use the S95 register to override the Wn command.

Purpose – Use this command to modify CONNECT result codes to report connection speeds, protocols and other information.

Parameters –

- |   |   |
|---|---|
| 0 | Upon connection, the modem reports only the DTE speed (e.g., CONNECT 19200). Subsequent responses are disabled.                                       |
| 1 | Upon connection, the modem reports the line speed, the error correction protocol, and the DTE speed, respectively. Subsequent responses are disabled. |
| 2 | Upon connection, the modem reports the DCE speed (e.g., CONNECT 14400). Subsequent responses are disabled.  |

Default – 0

Syntax – ATW0, ATW1 or ATW2

Result Codes –

- |       |                |
|-------|----------------|
| OK    | n = 0, 1, or 2 |
| ERROR | Otherwise      |

## Xn – Extended Result Codes

**Function** – This command selects which subset of the result messages will be used by the modem to inform the DTE of the results of commands.

Blind dialing is enabled or disabled by country parameters. If the user wishes to enforce dial tone detection, a W can be placed in the dial string (see D command).

If the modem is in facsimile mode (+FCLASS=1 or 2), the only message sent to indicate a connection is CONNECT without a speed indication.

**Purpose** – Use this command to control how the modem displays result codes.

**Parameters** –

- |   |   |
|---|---|
| 0 | The modem ignores dial tones and busy signals, and sends only OK, CONNECT, RING, NO CARRIER, ERROR and NO ANSWER result codes. Blind dialing is enabled/disabled by country parameters.                 |
| 1 | The modem ignores busy signals, and sends only OK, CONNECT, RING, NO CARRIER, ERROR, NO ANSWER, and CONNECT XXXX (XXXX =rate). Blind dialing enabled/disabled by country parameters.                    |
| 2 | The modem ignores busy signals but waits for a dial tone, and sends only OK, CONNECT, RING, NO CARRIER, ERROR, NO DIALTONE, NO ANSWER, and CONNECT XXXX.  |
| 3 | The modem ignores a dial tone but monitors for busy signals, and sends only OK, CONNECT, RING, NO CARRIER, ERROR, NO ANSWER, and CONNECT XXXX. Blind dialing is enabled/disabled by country parameters. |
| 4 | The modem monitors both dial tone and busy signals, and sends all messages.   |

**Default** – 4

**Syntax** – ATX1

**Result Codes** –

OK                      n = 0 to 4

ERROR                Otherwise

Short-form	Long-form	n Value in ATXn Command				
		0	1	2	3	4
0	OK	X	X	X	X	X
1	CONNECT	X	X	X	X	X
2	RING	X	X	X	X	X
3	NO CARRIER	X	X	X	X	X
4	ERROR	X	X	X	X	X
5	CONNECT 1200		X	X	X	X

6	NO DIAL TONE			X	X	X
7	BUSY				X	X
8	NO ANSWER		X	X	X	X
9	CONNECT 0600		X	X	X	X
10	CONNECT 2400		X	X	X	X
11	CONNECT 4800		X	X	X	X
12	CONNECT 9600		X	X	X	X
13	CONNECT 7200		X	X	X	X
14	CONNECT 12000		X	X	X	X
15	CONNECT 14400		X	X	X	X
16	CONNECT 19200		X	X	X	X
17	CONNECT 38400		X	X	X	X
18	CONNECT 57600		X	X	X	X
19	CONNECT 115200		X	X	X	X
20	CONNECT 230400	X	X	X	X	X
22	CONNECT 75TX/1200RX		X	X	X	X
23	CONNECT1200TX/75RX		X	X	X	X
24	DELAYED					X
32	BLACKLISTED					X
33	FAX	X	X	X	X	X
35	DATA	X	X	X	X	X
40	CARRIER 300	X	X	X	X	X
44	CARRIER 1200/75	X	X	X	X	X
45	CARRIER 75/1200	X	X	X	X	X
46	CARRIER 1200	X	X	X	X	X
47	CARRIER 2400	X	X	X	X	X
48	CARRIER 4800	X	X	X	X	X
49	CARRIER 7200	X	X	X	X	X
50	CARRIER 9600	X	X	X	X	X
51	CARRIER 12000	X	X	X	X	X
52	CARRIER 14400	X	X	X	X	X
53	CARRIER 16800	X	X	X	X	X
54	CARRIER 19200	X	X	X	X	X
55	CARRIER 21600	X	X	X	X	X
56	CARRIER 24000	X	X	X	X	X
57	CARRIER 26400	X	X	X	X	X

58	CARRIER 28800	X	X	X	X	X
59	CONNECT 16800		X	X	X	X
61	CONNECT 21600		X	X	X	X
62	CONNECT 24000		X	X	X	X
63	CONNECT 36400		X	X	X	X
64	CONNECT 28800		X	X	X	X
66	COMPRESSION: CLASS 5	X	X	X	X	X
67	COMPRESSION: V.42 bis	X	X	X	X	X
69	COMPRESSION: NONE	X	X	X	X	X
70	PROTOCOL: NONE	X	X	X	X	X
77	PROTOCOL: LAPM	X	X	X	X	X
78	CARRIER 31200	X	X	X	X	X
79	CARRIER 33600	X	X	X	X	X
80	PROTOCOL: ALT	X	X	X	X	X
81	PROTOCOL: ALT-CELLULAR	X	X	X	X	X
84	CONNECT 33600		X	X	X	X
91	CONNECT 31200		X	X	X	X
150	CARRIER 32000	X	X	X	X	X
151	CARRIER 34000	X	X	X	X	X
152	CARRIER 36000	X	X	X	X	X
153	CARRIER 38000	X	X	X	X	X
154	CARRIER 40000	X	X	X	X	X
155	CARRIER 42000	X	X	X	X	X
156	CARRIER 44000	X	X	X	X	X
157	CARRIER 46000	X	X	X	X	X
158	CARRIER 48000	X	X	X	X	X
159	CARRIER 50000	X	X	X	X	X
160	CARRIER 52000	X	X	X	X	X
161	CARRIER 54000	X	X	X	X	X
162	CARRIER 56000	X	X	X	X	X
165	CONNECT 32000	X	X	X	X	X
166	CONNECT 34000	X	X	X	X	X
167	CONNECT 36000	X	X	X	X	X
168	CONNECT 38000	X	X	X	X	X
169	CONNECT 40000	X	X	X	X	X
170	CONNECT 42000	X	X	X	X	X
171	CONNECT 44000	X	X	X	X	X
172	CONNECT 46000	X	X	X	X	X

173	CONNECT 48000	X	X	X	X	X
174	CONNECT 50000	X	X	X	X	X
175	CONNECT 52000	X	X	X	X	X
176	CONNECT 54000	X	X	X	X	X
177	CONNECT 56000	X	X	X	X	X
+F4	+FCERROR	X	X	X	X	X

An X in a column indicates that the message (either the long-form or short-form) is generated when that particular value of n (shown at the top of the column) has been selected using ATXn. If the column is blank, no message is generated for that ATXn option.

## Yn – Long Space Disconnect

Function – This command enables or disables long space (a 1.6 second break) disconnection.

Purpose – Use this command to enable or disable the modem to disconnect a call when it detects a long space break during a V.22bis connection.

Parameters –

- 0 Disables long space disconnect.
- 1 Enables long space disconnect. In non-error correction mode, the modem sends a long space of four seconds prior to going on-hook. In non-error correction mode, the modem goes on-hook after detecting a long.

Default – 0

Syntax – ATY0 or ATY1

Result Codes –

- OK n = 0 or 1
- ERROR Otherwise

## Zn – Soft Reset and Restore Profile

Function – The modem performs a soft reset and restores (recalls) the configuration profile according to the parameter supplied. If no parameter is specified, zero is assumed.

Purpose – Use this command to reset your user configuration profile.

Parameters –

- 0 Soft reset and restore stored profile 0.
- 1 Soft reset and restore stored profile 1.

Default – 0 and 1 (the factory defaults for 0 and 1 are identical)

Syntax – ATZ0 or ATZ1

Result Codes –

OK                    n = 0 or 1

ERROR                Otherwise

## AT& Commands Descriptions

The Jack of Spades will respond to the commands detailed below. Parameters applicable to each command are listed with the command description. The defaults shown for each configuration command are those used in the Ositech factory profile.

### &Cn – RLSD (DCD) Option

Function – The modem controls the Received Line Signal Detected (RLSD) also called the Data Carrier Detect (DCD) output according to the parameter used. Valid parameter values are written to S21 bit 5.

Purpose – Use this command to control the way the modem handles the remote modem's carrier signal.

Parameters –

0                    RLSD remains ON at all times.

1                    RLSD follows the state of the carrier.

Default – 1

Syntax – AT&C0 or AT%C1

Result Codes –

OK                    n = 0 or 1

ERROR                Otherwise

### &Dn – DTR Option

Function – This command interprets the ON to OFF transition of the DTR signal from the DTE in accordance with the parameter supplied. Valid parameter values are written to S21 bits 3 and 4.

Purpose – Use this command to control how the modem uses the Data Terminal Ready (DTR) signal.

Parameters –

0                    DTR signal is interpreted according to the current &Qn setting as follows:

&Q0, &Q5, &Q6 – DTR is ignored (assumed ON). Allows operation with DTEs which do not provide DTR.

&Q1, &Q4 – DTR drop causes the modem to hang up. Auto-answer is not affected.

&Q2, &Q3 – DTR drop causes the modem to hang up. Auto-answer is inhibited.

- 1 DTR drop is interpreted according to the current &Qn setting as follows:  
&Q0, &Q1, &Q4, &Q5, &Q6 – DTR drop is interpreted by the modem as if the asynchronous escape sequence had been entered. The modem returns to asynchronous command state without disconnecting.  
&Q2, &Q3 DTR drop causes the modem to hang up. Auto-answer is inhibited.
- 2 DTR drop is interpreted according to the current &Qn setting as follows:  
&Q0 through &Q6 DTR drop causes the modem to hang up. Auto-answer is inhibited.
- 3 DTR drop is interpreted according to the current &Qn setting as follows:  
&Q0, &Q1, &Q4, &Q5, &Q6 DTR drop causes the modem to perform a soft reset as if the Z command were received. The &Y setting determines which profile is loaded.  
&Q2, &Q3 DTR drop causes the modem to hang up. Auto-answer is inhibited.  
If &Q5, &Q6, +FCLASS=1 or +FCLASS=2 is in effect, the action taken is the same as for &Q0.

Default – 2

Syntax – AT&D2

Result Codes – None

## &Fn – Restore Factory Configuration (Profile)

Function – The modem loads the factory default configuration (profile). The factory defaults are identified for each command and in the S-Register descriptions. A configuration (profile) consists of a subset of S-Registers.

Purpose – Reset the modem to the original factory settings.

Parameters –

- 0 Restore factory configuration 0.
- 1 Restore factory configuration 1.

Default – None

Syntax – AT&F0 or AT&F1



Result Codes –

OK	If the modem is not connected.
ERROR	If the modem is connected.

## &Gn – Select Guard Tone

Function – The modem generates the guard tone selected by this command according to the parameter supplied (DPSK modulation modes only). Valid parameters are written to S23 bits 6 and 7.

For international use only. This command might not be permitted in some countries.

Purpose – Use this to set the appropriate Guard Tone for a particular country. This parameter is usually set automatically in countries which require a Guard Tone.

Parameters –

0	Disables guard tone. (Default for US models.)
1	Disables guard tone.
2	Selects 1800 Hz guard tone. (Default for W-class models.)

Default – None

Syntax – AT&G0

Result Codes –

OK	n = 0 to 2
ERROR	Otherwise

## &Jn – Telephone Jack Control

Function – This command loads the S-Register. Valid parameter values are written to S21 bit 1.

Purpose – This command is included for compatibility purposes only. You do not need to use this command.

Parameters –

0	&J0 command
1	&J1 command

Default – 0

Syntax – AT%J1

Result Codes –

OK	n = 0 or 1
ERROR	Otherwise

## &Kn – Flow Control

Function – This command defines the DTE/DCE (terminal/modem) flow control mechanism. Valid parameters are written to S39 bits 0, 1, and 2.

Purpose – Use this command to adjust the control flow between the computer and modem.

Parameters –

0	Disables flow control.
3	Enables RTS/CTS flow control.
4	Enables XON/XOFF flow control.
5	Enables transparent XON/XOFF flow control.
6	Enables both RTS/CTS and XON/XOFF flow.

Default – 3 for data modes; 6 for fax modes

Syntax – AT&K4

Result Codes –

OK	n = 0, 3, 4, 5 or 6
ERROR	Otherwise

## &Ln – Leased Line Operation

Function – This command requests leased line or dial-up operation. Valid parameters are written to S27 bit 2.

Purpose – This command is provided for compatibility only; you do not need to make mode changes—dial-up operation continues

Parameters –

0	Requests dial-up operation. Dial-up operation continues.
---	--

Default – 0

Syntax – AT&L0

Result Codes –

OK	n = 0
ERROR	Otherwise

## &Mn – Asynchronous/Synchronous Mode Selection

Function – This command determines the DTR operating mode. The modem treats the &M command as a subset of the &Q command.

Purpose – This command is supplied for backward compatibility only.

Parameters –

0	Selects direct asynchronous operation.
1	Reserved.
2	Reserved.
3	Reserved.

Default – 0

Syntax – AT&M0

Result Codes –

OK	n = 0 to 3
ERROR	Otherwise

## &Pn – Select Pulse Dial Make/Break Ratio

Function – This command determines the make/break ratio used during pulse dialing.

Purpose – Use this command to control the ratio of off-hook (make) to on-hook (break) interval used by the modem when it pulse dials.

Parameters –

0	Selects 39%-61% make/break ratio at 10 pulses per second.
1	Selects 33%-67% make/break ratio at 10 pulses per second.
2	Selects 39%-61% make/break ratio at 20 pulses per second.
3	Selects 33%-67% make/break ratio at 20 pulses per second.

Default – 0

Syntax – AT&P3

Result Codes –

OK	n = 0 to 3
ERROR	Otherwise

## &Qn – Sync/Async Mode

Function – This command is an extension of the &M command and is used to control the connection modes permitted. It is used in conjunction with S36 and S48. When the &Qn command is issued to select the mode, the subsequent connect message will report the DCE speed regardless of the W command and S95 settings.

Purpose – The modem supports three basic communications modes: asynchronous, autosync and error correction. Use this command to control the connection modes that are permitted with your communications software.

Parameters –

0	Selects direct asynchronous operation. The value 000b is written to S27 bits 3, 1, and 0 respectively.
1	Reserved.
2	Reserved.
3	Reserved.
4	Selects AutoSync operation. The value 100b is written to S27 bits 3, 1, and 0, respectively. AutoSync operation, when used in conjunction with the Hayes Synchronous Interface (HSI) capability in the DTE, provides synchronous communication capability from an asynchronous terminal.  Starting AutoSync. Set registers S19, S20, and S25 to the desired values before selecting AutoSync operation with &Q4. After the CONNECT message is issued, the modem waits the period of time specified by S25 before examining DTR. If DTR is on, the modem enters the synchronous operating state; if DTR is off, the modem terminates the line connection and returns to the asynchronous command state.  Stopping AutoSync. AutoSync operation is stopped upon loss of carrier or the on-to-off transition of DTR. Loss of carrier will cause the modem to return to the asynchronous command state. An on-to-off transition of DTR will cause the modem to return to the asynchronous command state and either not terminate the line connection (&D1 active) or terminate the line connection (any other &Dn command active).
5	The modem will try to negotiate an error-corrected link. The modem can be configured using S36 to determine whether a failure will result in the modem returning on-hook or will result in fallback to an asynchronous connection. The value 101b is written to S27 bits 3, 1, and 0, respectively.
6	Selects asynchronous operation in normal mode (speed buffering). The value 110b is written to S27 bits 3, 1, and 0, respectively.
Default – 5	
Syntax – AT&Q5	
Result Codes –	
OK	n = 0 to 6
ERROR	Otherwise

## &Rn – RTS/CTS Option

Function – This command selects how the modem controls the Clear To Send (CTS) signal. Enabled hardware flow (&K) can alter CTS operation. Valid parameter values are written to S21 bit 2.

Purpose – Use this command to control the state of the CTS operation.

Parameters –

- |   |   |
|---|---|
| 0 | In sync mode, CTS tracks the state of RTS; the RTS-to-CTS delay is defined by S26. In asynchronous mode, CTS is normally ON and will turn OFF only if required by flow control.               |
| 1 | In synchronous mode, CTS is always ON (RTS transitions are ignored) and tracks the state of RTS; In asynchronous mode, CTS is normally ON and will turn OFF only if required by flow control. |

Default – 0

Syntax – AT&R1

Result Codes –

- |       |            |
|-------|------------|
| OK    | n = 0 or 1 |
| ERROR | Otherwise  |

## &Sn – DSR Override

Function – This command selects how the modem will control Data Set Ready (DSR) operation. Valid parameter values are written to S21 bit 6.

Purpose – Use this command to set the DSR to work in accordance with EIA-232-D specifications or to remain on.

Parameters –

- |   |  |
|---|--|
| 0 | DSR remains ON at all times.   |
| 1 | DSR becomes active after answer tone has been detected and inactive after the carrier has been lost. |

Default – 0

Syntax – AT&S1

Result Codes –

- |       |            |
|-------|------------|
| OK    | n = 0 or 1 |
| ERROR | Otherwise  |

## &Tn – Test and Diagnostics

Function – The modem performs selected test and diagnostic functions according to the parameter supplied. A test can be run only when in an asynchronous operation in non-

error-correction mode (normal or direct mode). To terminate a test in progress, the escape sequence must be entered first, except for parameters 7 and 8. If S18 is non-zero, a test will terminate automatically after the time specified by S18 and display the OK message. For tests 3, 6 and 7, a connection between the modem and a remote modem must first be established.

Purpose – Use this command to run supported test and diagnostic procedures.

Parameters –

- |   |   |
|---|---|
| 0 | Terminates test in progress and clears S16.   |
| 1 | Initiates local analog loopback, V.54 Loop 3. Sets S16 bit 0. If a connection exists when this command is issued, the modem hangs up. The CONNECT XXXX message is displayed at the start of the test.   |
| 2 | Returns an ERROR message.   |
| 3 | Initiates local digital loopback, V.54 Loop 2. Sets S16 bit 2. If no connection exists, ERROR is returned. Sets S16 bit 4 when the test is in progress.   |
| 4 | Enables digital loopback acknowledgment for remote request, i.e., an RDL request from a remote modem is allowed. Sets S23 bit 0.  |
| 5 | Disables digital loopback acknowledgment for remote request, i.e., an RDL request from a remote modem is denied. Clears S23 bit 0. (Default.)   |
| 6 | Requests a remote digital loopback (RDL), V.54 Loop 2, without self test. If no connection exists, ERROR is returned. Sets S16 bit 4 when the test is in progress. The CONNECT XXXX message is displayed upon the start of the test.  |
| 7 | Requests a remote digital loopback (RDL), V.54 Loop 2, with self test. (In self test, a test pattern is looped back and checked by the modem.) If no connection exists, ERROR is returned. When the test is terminated either via expiration of S18, or via the &T0 or H command, the number of detected errors is reported to the DTE. Sets S16 bit 5 when the test is in progress.  |
| 8 | Initiates local analog loopback, V.54 Loop 3, with self test. (In self test, a test pattern is looped back and checked by the modem.) If a connection exists, the modem hangs up before the test is initiated. When the test is terminated either via expiration of S18, or via the &T0 or H command, the number of detected errors is reported to the DTE. Sets S16 bit 6 when the test is in progress. This command may not be available in some countries due to PTT restrictions. |

Default – None

Syntax – AT&T8

Result Codes – Specific to test

## &V – Display Current Configuration and Stored Profiles

Function – Displays the current (active) configuration, the stored (user) profiles, and the first four stored telephone numbers. The stored profiles and telephone numbers are not displayed if the NVRAM is not installed or is not operational as detected by the NVRAM test during reset processing.

Purpose – Use this command to check various S-Register values.

Parameters – None

Default – None

Syntax – AT&V

Result Codes – OK

Example –

AT&V

ACTIVE PROFILE:

B0 E1 L1 M1 N1 Q0 T V1 W0 X4 Y0 &C0 &D0 &G2 &J0 &K3 &Q5 &R1 &S0 &T4 &X0 &Y0  
S00:002 S01:000 S02:043 S03:013 S04:010 S05:008 S06:002 S07:030 S08:002 S09:006  
S10:014 S11:255 S12:050 S18:000 S25:005 S26:001 S36:007 S37:000 S38:020 S46:138  
S48:007 S95:000

STORED PROFILE 0:

B0 E1 L1 M1 N1 Q0 T V1 W0 X4 Y0 &C0 &D0 &G2 &J0 &K3 &Q5 &R1 &S0 &T4 &X0  
S00:002 S02:043 S06:002 S07:030 S08:002 S09:006 S10:014 S11:095 S12:050 S18:000  
S36:007 S37:000 S40:105 S41:003 S46:138 S95:000

STORED PROFILE 1:

B0 E1 L1 M1 N1 Q0 T V1 W0 X4 Y0 &C0 &D0 &G2 &J0 &K3 &Q5 &R1 &S0 &T4 &X0  
S00:002 S02:043 S06:002 S07:030 S08:002 S09:006 S10:014 S11:095 S12:050 S18:000  
S36:007 S37:000 S40:105 S41:003 S46:138 S95:000

TELEPHONE NUMBERS:

0 = 1 =

2 = 3 =

OK

## &V1 – Display Last Connection Statistics

Function – This command displays the last connection.

Purpose – Use this command to evaluate the last modem connection.

Parameters – None

Default – None

Syntax – AT&V1

Result Codes – None

Example –

```
TERMINATION REASON..... LINK DISCONNECT or LOCAL REQUEST
LAST TX data rate..... 33600 BPS
HIGHEST TX data rate..... 33600 BPS
LAST RX data rate..... 28800 BPS
HIGHEST RX data rate..... 28800 BPS
Error correction PROTOCOL... LAPM
Data COMPRESSION..... V42Bis
Line QUALITY..... 030
Highest SPX RX state..... 068
Highest SPX TX state..... 067
```

## &Wn – Store Current Configuration

Function – Saves the current (active) configuration (profile), including S-Registers, in one of the two user profiles in NVRAM as denoted by the parameter value. This command will yield an ERROR message if the NVRAM is not installed or is not operational as detected by the NVRAM test.

The current configuration is comprised of a list of storable parameters illustrated in the &V command. These settings are restored to the active configuration upon receiving an Zn command or at power up.

Purpose – Use this command to save the current configuration profile in NVRAM.

Parameters –

0	Stores the current configuration as profile 0.
1	Stores the current configuration as profile 1

Default – None

Syntax – AT&W0

Result Codes –

OK	n = 0 or 1
ERROR	NVRAM is not installed or operational

## &Xn – Select Synchronous Clock Source

Function – This command selects the source of the transmit clock for the synchronous mode of operation. Valid parameter values are written to S27 bits 4 and 5.

In asynchronous mode, the transmit and receive clocks are turned OFF. In synchronous mode, the clocks are turned ON with the frequency of 1200 Hz or faster corresponding to the speed that is selected for modem operation.

Purpose – Use this command to choose a source for the synchronous clock.

Parameters –



- |   |  |
|---|--|
| 0 | Selects internal timing. The modem generates the transmit clock signal and applies it to the TXCLK output at the serial interface.   |
| 1 | Selects external timing. The local DTE sources the transmit clock signal on the XTCLK input of the serial interface. The modem applies this clock to the TXCLK output at the serial interface. |
| 2 | Selects slave receive timing. The modem derives the transmit clock signal from the incoming carrier and applies it to the TXCLK output at the serial interface.                                |

Default – None

Syntax – AT&X2

Result Codes –

OK                    n = 0 to 2

ERROR                Otherwise

## &Yn – Designate a Default Reset Profile

Function – This command selects which user profile is used after a hard reset.

Purpose – Use this command to select a user profile.

Parameters –

0                    Set modem to use profile 0.

1                    Set modem to use profile 1.

Default – None

Syntax – AT&Y1

Result Codes –

OK                    n = 0 to 1

ERROR                If n > 1 or if NVRAM is not installed or is not operational.

## &Zn=x – Store Telephone Number

Function – This command stores up to four telephone numbers and each telephone number dial string can contain up to 34 digits. This command requires at least 256-byte NVRAM.

Purpose – Use this command to store up to four commonly dialed phone numbers.

Parameters – None

Default – None

Syntax – n = 0 to 3 and x = up to 34 digits

Result Codes –

OK	n = 3 and x = 34 digits.
ERROR	If n > 3, x > 35 digits, or if NVRAM is not installed or is not operational.

## AT% Commands Descriptions

The Jack of Spades will respond to the commands detailed below. Parameters applicable to each command are listed with the command description. The defaults shown for each configuration command are those used in the Ositech factory profile.

### %En – Enable/Disable Line Quality Monitor and Auto-Retrain or Fallback/Fall Forward

**Function** – This command controls whether or not the modem automatically monitors the line quality and requests a retrain (%E1) or fall back when line quality is insufficient or fall forward when line quality is sufficient (%E2). Valid parameter values are written to S41bits 2 and 6.

If enabled, the modem attempts to retrain for a maximum of 30 seconds.

**Purpose** – Use this command to monitor line quality and auto-retrain if necessary.

**Parameters** –

0	Disable line quality monitor and auto-retrain.
1	Enable line quality monitor and auto-retrain.
2	Enable line quality monitor and fallback/fall forward.

**Default** – 2

**Syntax** – AT%E1

**Result Codes** –

OK	n = 0, 1, or 2
ERROR	Otherwise

**Fallback/Fall Forward** – When %E2 is active, the modem monitors the line quality (EQM). When line quality is insufficient, the modem initiates a rate re-negotiation to a lower speed within the V.34/V.32 bis/V.32 (RC288) or V.32 bis/V.32 (RC144) modulation speeds. The modem keeps falling back within the current modulation until the speed reaches 2400 bps (V.34) or 4800 bps (V.32). Below this rate, the modem retrains only if EQM thresholds are exceeded. If the EQM is sufficient for at least one minute, the modem initiates a rate re-negotiation to a higher speed within the current modulation speeds. The rate re-negotiations are done without a retrain if a V.32 bis connection is established.

Speeds attempted during fallback/fall forward are those shown to be available in the rate sequences exchanged during the initial connection. Fallback/fall forward is available in

error correction and normal modes, but not in direct mode or synchronous mode with external clocks.

## %L – Line Signal Level

Function – This command displays a value which indicates the received signal level. The value returned is a direct indication (DAA dependent) of the receive level at the MDP, not at the telephone line connector. For example, 009 = -9 dBm, 043 = -43 dBm, and so on.

Purpose – Use this command to check the line signal level.

Parameters – None

Default – None

Syntax – AT%L

Result Codes – OK

## %Q – Line Signal Quality

Function – This command displays the line signal quality (DAA dependent) and returns the higher order byte of the EQM value. Based on the EQM value, retrain or fallback/fall forward might be initiated if fallback/fall forward is enabled by %E1 or %E2.

Purpose – Use this command to check the line signal quality.

Parameters – None

Default – None

Syntax – AT%Q

Result Codes –

OK                      If the modem is connected.

ERROR                If the modem is not connected, or connected in 300 bps, V.23 or fax modes.

Example –

AT%Q

015

## AT\ Command Descriptions

The Jack of Spades will respond to the commands described below. Parameters applicable to each command are listed with the command description. The defaults shown for each configuration command are those used in the Ositech factory profile.

## \Kn – Break Control

Function – This command controls the response of the modem to a break received from the DTE or the remote modem or the \B command according to the parameter supplied. Valid parameters are written to S40 bits 3, 4 and 5.

Purpose – Use this command to control how the modem processes a break signal.

Parameters –

In the first state, the modem receives a break from the DTE while operating in data transfer mode:

- |   |  |
|---|--|
| 0 | Enters on-line command mode; no break is sent to the remote modem. |
| 1 | Clears data buffers and sends break to the remote modem.           |
| 2 | Enters on-line command mode; no break is sent to the remote modem. |
| 3 | Sends break to the remote modem immediately.                       |
| 4 | Enters on-line command mode; no break is sent to the remote modem. |
| 5 | Sends break to the remote modem in sequence with transmitted data. |

In the second case, the modem is in the on-line command state (waiting for AT commands) during a data connection, and the \B is received in order to send a break to the remote modem:

- |   |  |
|---|--|
| 0 | Clears data buffers and sends break to the remote modem. |
| 1 | Clears data buffers and sends break to the remote modem. |
| 2 | Sends break to the remote modem immediately.             |
| 3 | Sends break to the remote modem immediately.             |
| 4 | Sends break to the remote modem in sequence with data.   |
| 5 | Sends break to the remote modem in sequence with data.   |

In the third case, a break is received from a remote modem during a non-error corrected connection:

- |   |  |
|---|--|
| 0 | Clears data buffers and sends a break to the DTE.        |
| 1 | Clears data buffers and sends a break to the DTE.        |
| 2 | Sends a break immediately to the DTE.                    |
| 3 | Sends a break immediately to the DTE.                    |
| 4 | Sends a break in sequence with the received data to DTE. |
| 5 | Sends a break in sequence with the received data to DTE. |

Default – 5

Syntax – AT\K3

Result Codes –

OK	n = 0 to 5
ERROR	Otherwise

## \Nn – Operating Mode

Function – This command selects the operating mode in which the modem operates during connections.

Purpose – Use this command to set the operating mode.

Parameters –

0	Selects normal speed buffered mode (disables error-correction mode)—forces &Q6.
1	Serial interface selected—Selects direct mode and is equivalent to &M0 or &Q0 mode of operation—forces &Q0. Parallel interface selected—same as \N0.
2	Selects reliable (error-correction) mode. The modem will first attempt an LAPM connection and then an MNP connection. Failure to make a reliable connection results in the modem hanging up—forces &Q5, S36=4 and S48=7.
3	Selects auto reliable mode. This operates the same as \N2 except failure to make a reliable connection results in the modem falling back to the speed buffered normal mode—forces &Q5, S36=7 and S48=7.
4	Selects LAPM error-correction mode. Failure to make an LAPM error-correction connection results in the modem hanging up—forces &Q5 and S48=0. Note: The -K1 command can override the \N4 command.
5	Selects MNP error-correction mode. Failure to make an MNP error-correction connection results in the modem hanging up—forces &Q5, S36=4 and S48=128.

Default – None

Syntax – AT\Nn

Result Codes –

OK	n = 0 to 5
ERROR	Otherwise

## \Vn – Single Line Connect Message Enable

Function – This command enables or disables the Single Line Connect Message (SLCM).

Purpose – Use this command to display or to hide the SLCM: connection speed (e.g., 52000), modulation (e.g., V.90), protocol (e.g., LAPM), compression (e.g., V42BIS), and line speed (e.g., 14400).

Parameters –

- |   |   |
|---|---|
| 0 | Connect messages are controlled by the command settings X, W and S95.   |
| 1 | Connect messages are displayed in the single line format described below, subject to the command settings V (Verbose) and Q (Quiet). In Non-Verbose mode (V0), single line connect messages are disabled and a single numeric result code is generated for CONNECT DTE. |

Default – None

Syntax – AT\V1

Result Codes –

When single line connect messages are enabled, there are no CARRIER, PROTOCOL or COMPRESSION messages apart from the fields described below.

The single line connect message format is:

CONNECT <DTE Speed></Modulation></Protocol></Compression></  
Line Speed>/<Voice and Data>

Where:

DTE Speed: DTE speed, e.g., 57600.

Modulation: “V32” for V.32 or V.32bis modulations.  
“V34” for V.34 modulations.

Note : Modulation is omitted for all other modulations.

Protocol: “NONE” for no protocol.  
“ALT” for Microcom Network Protocol.  
“LAPM” for LAP-M protocol.

Compression: “CLASS5” for Microcom MNP5 compression.  
“V42BIS” for V.42bis compression.

Note : Compression is omitted if protocol is NONE.

Line Speed: Asymmetric rates are displayed as /rate:TX/rate:RX, e.g., /1200 TX/75 RX.

Symmetric rates are displayed as a single DCE rate, e.g., 14400.

Data: Blank for Data mode only.

## AT+ Commands Descriptions

The Jack of Spades will respond to the commands described below. Parameters applicable to each command are listed with the command description. The defaults shown for each configuration command are those used in the Ositech factory profile.

### +MS – Select Modulation

**Function** – This extended-format command selects the modulation and (optionally) enables or disables automode, specifies the lowest and highest connection rates, selects m-Law or A-Law codec type, and enables or disables robbed bit signaling generation (server modem) or detection (client modem) using one to five subparameters.

The command format is:

```
+MS= <mod>  
[, [<automode>][, [<min_rate>][, [<max_rate>][, [<x_law>][, [<rb_signaling>]]]]]]<CR>
```

1For 14400 bps and lower speeds, the Nn command and S37 register can alternatively be used, in which case the +MS subparameters will modified to reflect the Nn and S37=x settings. Use of the Nn and S37=x commands is not recommended but is provided for compatibility with existing communication software (S37 is not updated by the +MS command).

2Subparameters not entered (enter a comma only or <CR> to skip the last subparameter) remain at their current values.

**Purpose** – This command is used commonly to set the modem modulation.

**Reporting Selected Options** –

The modem can send a string of information to the DTE consisting of selected options using the following command:

```
+MS?
```

The response is:

```
+MS:          <mod>,<automode>,<min_rate>,<max_rate>,<x_law>,<rb_signaling>
```

For example:

```
+MS:          56,1,300,56000,0,0 [56K modem default values]
```

```
+MS:          11,1,300,33600,0,0 [33.6K modem default values]
```

**Reporting Supported Options** –

The modem can send a string of information to the DTE consisting of supported options using the following command:

```
+MS=?
```

The response is:

+MS: (list of supported <mod> values), (list of supported <automode> values), (list of supported <min\_rate> values), (list of supported <max\_rate> values), (list of supported <x\_low> values), (list of supported <rb\_signaling> values)

For example,

+MS: (0,1,2,3,9,10,11,56, 64,69), (0,1), (300-33600), (300-56000), (0,1), (0,1) [56K default values]

+MS: (0,1,2,3,9,10,11,64,69), (0,1), (300-33600), (300-33600), (0,1), (0,1) [33.6K default values]

#### Subparameter Definitions –

<mod> A decimal number which specifies the preferred modulation (automode enabled) or the modulation (automode disabled) to use in originating or answering a connection. The options are:

<mod>	Modulation	Possible Rates (bps)	Notes
0	V.21	300	
1	V.22	1200	
2	V.22 bis	2400 or 1200	
3	V.23	1200	See note below
9	V.32	9600 or 4800	
10	V.32 bis	14400, 12000, 9600, 7200 or 4800	Default for 14.4K modems
11	V.34	33600, 31200, 28800, 26400, 24000, 21600, 19200, 16800, 14400, 12000, 9600, 7200, 4800 or 2400	Default for 56K, 33.6K and 28.8K modems
56	V.90 and K56flex	56000, 54000, 52000, 50000, 48000, 46000, 44000, 42000, 40000, 38000, 36000, 34000 or 32000	56K modems only
64	Bell 103	300	
69	Bell 212	1200	

<sup>1</sup>See optional <automode>, <min\_rate>, and <max\_rate> subparameters.

<sup>2</sup>For V.23, originating modes transmit at 75 bps and receive at 1200 bps; answering modes transmit at 1200 bps and receive at 75 bps. The rate is always specified as 1200 bps.



The modem might also automatically switch to another modulation (automode), subject to the following constraints:

- The modem may not be able to automatically switch from the current modulation (specified by <mod>) to some other modulation. For example, there is no standard way to automode from Bell 103 to V.23.
- The DTE may disable automode operation (see <automode> below).
- The DTE may constrain the range of modulations available by specifying the lowest and highest rates (see <min\_rate> and <max\_rate> below).

<automode> is an optional numeric value which enables or disables automatic modulation negotiation using V.8 bis/V.8 or V.32 bis Annex A. The options are:

<automode>	Option Selected	Notes
0	Automode disabled	
1	Automode enabled using V.8 bis/V.8 or V.32 Annex A	Default

The default value is 1, which enables automode. There are modulations for which there is no automatic negotiation, e.g., Bell 212 (<mod> = 69).

For <automode> = 0 (automode disabled, i.e., fixed modulation):

- If <max\_rate> is within the rates supported by the selected modulation, the selected rate is that specified by <max\_rate>. For example:  
+MS=10,0,1200,4800 selects V.32 bis 4800 bps fixed rate.
- If <max\_rate> is greater than the highest speed supported by the modulation specified by <mod>, the starting rate is the highest rate supported by the selected modulation. For example:  
+MS=10,0,2400,14400 selects V.32 bis 14400, 12000, 9600, 7200, or 4800 bps.
- To emulate issuance of the NOS37=x command sequence to select fixed mode operation, specify the <max\_rate> and <min\_rate> both to be the (same) requested speed, and <mod> to be the modulation for that speed. For example:  
+MS=11,0,16800,16800 selects V.34 16800 bps fixed mode (no comparable S37 command).  
+MS=10,0,12000,12000 selects V.32 bis 12000 bps fixed mode (same as NOS37=10).

For <automode> = 1 (automode enabled, i.e., automatically selected speed and modulation):

The modem connects at the highest possible rate in accordance with V.8 bis/V.8, or V.32 bis Annex A if the remote modem does not support V.8 bis/V.

- If <max\_rate> is greater than the highest rate supported by the modulation specified by <mod>, the modem automodes down from the highest rate of the selected modulation. For example:  
+MS=10,1,1200,24000 selects automoding down from V.32 bis 14400 bps.

- To emulate issuance of the N1S37=x sequence command, specify the modulation and the rate to start automoding down from using <mod> and <max\_rate>, respectively. Set <min\_rate> to 300 to allow automoding all the way down to V.21 300 bps. For example:  
 +MS=11,1,300,16800 selects automode starting at V.34 16800 bps (no comparable S37 command).  
 +MS=9,1,300,12000 selects automode starting at V.32 bis 12000 bps (same as N1S37=10).

<min\_rate> an optional number which specifies the lowest rate at which the modem may establish a connection. The value is decimal coded, in units of bps, e.g., 2400 specifies the lowest rate to be 2400 bps. The default is 300 for 300 bps.

<max\_rate> an optional number which specifies the highest rate at which the modem may establish a connection. The value is decimal coded, in units of bps, e.g., 14400 specifies the highest rate to be 14400 bps. The default is 28800 for 28800 bps.

<x\_law> an optional number which specifies the codec type. The options are:  
 0 = m-Law  
 1 = A-Law  
 Note – ATZ resets the <x\_law> selection to 0 (m-Law).

<rb\_signaling> an optional number which enables or disables robbed bit signaling generation in a server modem or enables or disables robbed bit signaling detection in a client modem. The options are:  
 0 = Robbed bit signaling generation (server modem ) or detection (client modem) disabled (default)  
 1 = Robbed bit signaling generation (server modem ) or detection (client modem) enabled  
 Note – ATZ resets the <rb\_signaling> selection to 0 (disabled).

Result Codes –

OK	Valid subparameter string
ERROR	Otherwise

## +Hn – Enable/Disable RPI and DTE Speed

Function – This command enables or disables Rockwell Protocol Interface (RPI) processing and sets the DTE speed.

Purpose – Use this command when poor telephone lines are anticipated. Use the H1 command to set the link negotiation speed to 1200 bps (this facilitates link negotiation).

Parameters –

0	Disables protocol interface and video ready mode.
1	Enables RPI mode and sets DTE speed to 19200 bps.
2	Enables RPI mode and sets DTE speed to 38400 bps.
3	Enables RPI mode and sets DTE speed to 57600 bps.
11	Enables RPI+ mode. When in RPI+ mode, a link is established between the modem and the WinRPI or WinRPI95 host PC software driver to allow the modem to support protocol (V.42bis/LAP-M/MNP2-5) connections with a remote modem. This command should only be used when the WinRPI or WinRPI95 driver software is installed in the PC.
16	Enables video ready mode.
Default – 0	
Syntax – AT+H1	
Result Codes –	
OK	n = 0 to 3, 11, 16
ERROR	Otherwise

## AT- Commands Description

The Jack of Spades will respond to the commands described below. Parameters applicable to each command are listed with the command description. The defaults shown for each configuration command are those used in the Ositech factory profile.

### -SDR=n – Enable/Disable Distinctive Ring

**Function** – This command enables or disables detection and reporting of distinctive ring. The syntax is AT-SDR=n, where n is a number from 0 to 7. One, two, or three distinctive ring types can be simultaneously enabled depending upon the value of n (bit mapped). The detected ring type is reported in the long form (verbose) of the result code by appending the ring type number to the end of the RING message.

**Purpose** – Use this command to select (or disable) a particular distinctive ring.

**Parameters** –

0	Disables Distinctive Ring. Any valid ring detected is reported as RING.
1	Enables Distinctive Ring Type 1.
2	Enables Distinctive Ring Type 2.
3	Enables Distinctive Ring Type 1 and 2.
4	Enables Distinctive Ring Type 3.
5	Enables Distinctive Ring Type 1 and 3.

6 Enables Distinctive Ring Type 2 and 3.  
 7 Enables Distinctive Ring Type 1, 2, and 3.

Default – 0

Syntax – AT-SDR=1

Result Codes –

OK n = 0 to 7

ERROR Otherwise

The n value bit map is –

Bit 0=1 Enable RING type 1. RING type 1 is detected and reported as RING1.

Bit 1=1 Enable RING type 2. RING type 2 is detected and reported as RING2.

Bit 2=1 Enable RING type 3. RING type 3 is detected and reported as RING3.

The ring types supported and the corresponding ring cadence detect criteria are –

Distinctive Ring Type	Ring Cadence Detect Criteria
1	2.0 sec. ON, 4.0 sec. OFF
2	0.8 sec. ON, 0.4 sec. OFF, 0.8 sec. ON, 0.4 sec. OFF,
3	0.4 sec. ON, 0.2 sec. OFF, 0.4 sec. ON, 0.2 sec. OFF, 0.8 sec. ON, 0.4 sec. OFF

1The Ring Indicate (RI) output does not toggle on the first ring if AT-SDR\_0.

2The RI output waveform is the same for all ring types detected, i.e., RI is on for the total duration of the ring period.

## Error Detection and Data Compression Commands

### Descriptions

The Jack of Spades will respond to the commands described below. Parameters applicable to each command are listed with the command description. The defaults shown for each configuration command are those used in the Ositech factory profile.

#### %C – Enable/Disable Data Compression

Function – Enables or disables data compression negotiation. The modem can only perform data compression on an error corrected link. The parameter value, if valid, is written to S41 bits 0 and 1.

Purpose – Use this command to control data compression.

Parameters –

0 Disables data compression. Resets S46 bit 1.

1	Enables MNP 5 data compression negotiation. Resets S46 bit 1.
2	Enables V.42 bis data compression. Sets S46 bit 1.
3	Enables both V.42 bis and MNP 5 data compression. Sets S46 bit 1.

Default – 3

Syntax – AT%C2

Result Codes –

OK	n = 0, 1, 2, or 3
ERROR	Otherwise

## \An – Select Maximum MNP Block Size

Function – The modem will operate an MNP error corrected link using a maximum block size controlled by the parameter supplied. The parameter value, if valid, is written to S40 bits 6 and 7.

Purpose –

Parameters –

0	64 characters
1	128 characters
2	192 characters
3	256 characters

Default – 1

Syntax – AT\A3

Result Codes –

OK	n = 0 to 3
ERROR	Otherwise

## \Bn – Transmit Break to Remote

Function – In non-error correction mode, the modem will transmit a break signal to the remote modem with a length in multiples of 100ms according to parameter specified. If a number in excess of 9 is entered, 9 is used. The command works in conjunction with the \K command.

Purpose – Use this command when the modem is in non-error correction mode to send a break to the remote modem.

Parameters – In error correction mode, the modem signals a break through the active error correction protocol, and gives no indication the length.

1-9	Break length in 100 ms units.
-----	-------------------------------

Default – 3

Syntax – AT\B2

Result Codes –

OK                      If connected in data modem mode.

NO CARRIER          If not connected or connected in fax modem mode.

When the modem receives a break from the remote modem, break is passed to the DTE as follows: In non-error correction mode direct, the break length is passed; in non-error correction mode normal and in error correction mode, a 300 ms break is passed.

## MNP 10 Commands Descriptions

The Jack of Spades will respond to the commands described below. Parameters applicable to each command are listed with the command description. The defaults shown for each configuration command are those used in the Ositech factory profile.

### )Mn – Enable Cellular Power Level Adjustment

Function – This command adjusts the transmit level based on attenuation and the signal-to-noise ratio of the cellular connection.

Purpose – Use this command to minimize “clipping”.

Parameters –

0                      No transmit level adjustment; transmit level is fixed at –10dBm.

1                      Adjusts the transmit level during retrain speed shift.

Default – 0

Syntax – AT)Mn

Result Codes –

OK                      n = 0 to 2

ERROR                Otherwise

### -Kn – MNP Extended Services

Function – Enables or disables conversion of a V.42 LAPM connection to an MNP 10 connection. Valid parameters are written to S40 bits 0 and 1.

Purpose – Use this command to enable or disable protocol conversion.

Parameters –

0                      Disables V.42 LAPM to MNP 10 conversion.

1                      Enables V.42 LAPM to MNP 10 conversion.

2                      Enables V.42 LAPM to MNP 10 conversion; inhibits MNP Extended

Services initiation during V.42 LAPM answer mode detection phase.

Default – 0

Syntax – AT-K1

Result Codes –

OK                    n = 0 or 2

ERROR                Otherwise

## **-SEC=n – Enable/Disable MNP 10EC**

Function – This command enables or disables MNP 10EC operation.

Purpose – Use this command to enable or disable error correction protocol.

Parameters –

?                    Retrieves the current -SEC command setting, e.g., 1,18.

0                    Disables MNP 10EC; the transmit level is that defined in S91.

1                    [<tx level>] Enable MNP 10EC; the transmit level will be defined by the sub parameter <tx level> range 0 to 30 (0 dBm to -30 dBm), the default <tx level> (<tx level> not specified) is the S91 value.

Default – None

Syntax – -SEC=n,[<tx level>] where <tx level> is the optional transmit level sub parameter.

Result Codes –

OK                    n=0, 1, or 1 and <tx level>=0 to 30

ERROR                Otherwise

Example – AT-SEC=1,18 enables MNP 10EC and sets the transmit level to -18 dBm.

If AT-SEC=0, the modem will automatically set AT-SEC=1 if the remote modem indicates Cellular in the V.8 bis/V.8 phase or if a Cellular Driver is loaded and the Cell Phone is attached.

## **@Mn – Initial Cellular Power Level Setting**

Function – This command sets the initial upshift power level at connect. This level is used until line conditions can be determined.

Purpose – Use this command to adjust the upshift power level.

Parameters – 0 - 31

0                    -26dBm

1                    -30dBm

2 – 10              -10dBm

11	-11dBm
12	-12dBm
.	
.	
30	-30dBm
31	-31dBm
Default – 0	
Syntax – AT@M12	
Result Codes –	
OK	n = 0 to 30
ERROR	Otherwise

## :E – Compromise Equalizer Enable Command

Function – This command enables or disables the V.32 compromise equalizer.

Purpose – Use this command to control the V.32 CE.

Parameters –

0	Disables V.32 compromise equalizer.
1	Enables V.32 compromise equalizer.

Default – 1

Syntax – AT:E1

Result Codes –

OK	n = 0 or 1
ERROR	Otherwise

## W-Class Commands Descriptions

The Jack of Spades will respond to the commands detailed below. Parameters applicable to each command are listed with the command description. The defaults shown for each configuration command are those used in the Ositech factory profile.

### \*B – Display Blacklisted Numbers

Function – This command requests the modem to return a list of blacklisted numbers to the DTE. The format of the response is shown by the example below. Permanently forbidden numbers as defined by country requirements will not appear on this list. If no numbers are blacklisted, only the **OK** result code is issued.

Purpose – Use this command to view blacklisted numbers.



Parameters – None

Default – None

Syntax – AT\*B

Result Codes –

OK                      If no numbers are blacklisted.

Example –

NO. - PHONE NUMBER

-----  
1; 4175537660  
2; 8288924961  
3; 3887278862  
4; 3124839442  
5; 6284664  
OK

## \*D – Display Delayed Numbers

Function – This command causes the modem to send a list of the delayed numbers together with the delay associated with each. The modem will return a list of delayed telephone numbers as defined in the \*B command. The format of the response is shown by the example below (delay times are shown as hours:minutes:seconds).

Purpose – Use this command to view delayed numbers.

Parameters – None

Default – None

Syntax – AT\*D

Result Codes –

OK                      If no numbers are delayed.

Example –

NO. - PHONE NUMBER -DELAY

-----  
1; 8264734660 2:00:00  
2; 7532634661 2:00:00  
3; 2587334662 0:02:00  
4; 7532651663 0:03:25  
5; 7459931664 0:01:45  
OK

## \*NCn – Country Select

Function – Up to four sets of country parameters may be stored in the EPROM. This command checks to see if the entered number matches the country code of one of the countries stored in the EPROM. If found, the modem stores the location of that country in NVRAM. Upon power up or a soft reset (Z command), the modem uses this location to load the parameters for the corresponding country. The default value of zero is used if no NVRAM is installed or the NVRAM failed self test during reset.

Note – Automatic DAA country code recognition is enabled by the \*NC0 command (the 0 country code is reserved for this function). Automatic DAA country code recognition is disabled by the \*NCn command selecting any other valid country code.

Purpose – Use this command to store up to four country parameters.

Parameters –

Country	Code (n)	Country	Code (n)
Australia	40	Korea	44
Austria	1	Luxembourg	9
Belgium	2	Mexico	21
Bulgaria	27	Netherlands	10
Canada	20	New Zealand	48
China	41	Norway	11
Czech Republic	19	Philippines	43
Denmark	3	Poland	24
Finland	4	Portugal	12
France	5	Russia	25
Germany	6	Singapore	47
Greece	17	Slovakia	26
Hong Kong	42	Spain	13
Hungary	23	Sweden	14
India	30	Switzerland	15
Ireland	7	Taiwan	46
Israel	18	United Kingdom	16
Italy	8	United States	22
Japan	43		
Default	– 0		

Syntax – AT\*NC16

Result Codes –

OK	If parameters corresponding to entered country code are present in EPROM.
ERROR	Otherwise

## Caller ID Commands Descriptions

The Jack of Spades will respond to the command detailed below. This command is for advanced users only.

### #CIDn – Caller ID

Function – This command enables or disables Caller ID.

Purpose – Use this command to enable or disable Caller ID.

Parameters –

#CID?	Retrieves the current Caller ID mode from the modem.
#CID=?	Turns the mode capabilities of the modem in a list with each element separated by commas.
0	Disables Caller ID.
1	Enables Caller ID with formatted presentation to the DTE. The modem will present the data items in a <Tag><Value> pair format. The expected pairs are data, time, caller code (telephone number), and name.
2	Enables Caller ID with unformatted presentation to the DTE. The modem will present the entire packet of information, excluding the leading U's, in ASCII printable hex numbers.

Default – 0

Syntax – AT#CID1

Result Codes –

OK	n = 0 or 2
ERROR	Otherwise

Formatted Form Reporting –

The modem presents the data in the <tag> = <value> pair format as described below. Spaces are present on both sides of the equal sign.

Tag	Description
DATE	DATE = MMDD where MM is the month number (01 to 12) and DD is the day number (01...31).

TIME	TIME = HHMM where HH is the hour number (00 to 23) and MM is the minute number (00 to 59).
NMBR	NMBR = <number> or P or O where <number> is the telephone number of the caller, where P indicates that the calling number information is not available since the originating caller has requested private service, and where O indicates that the calling number information is not available or out of service at the calling location.
NAME	NAME = <listing name> where <listing name> is the subscription name.
MESG	MESG = <data tag> <length of message> <data> <checksum> in printable ASCII hex numbers. This tag indicates a data item not listed above. The message is only possible for Multiple Message Format.

Notes – 1. The modem does not present any Caller ID information if the DCE detects a checksum error in the Caller ID packet.  
 2. In the event of an unrecognized data tag, the modem will present the data in ASCII hex numbers following the MESG tag.

#### Example Formatted Form Reporting –

This example illustrates the standard Caller ID message packet:

```

RING
DATE = 0321
TIME = 1405
NMBR = 5045551234
NAME = A N OTHER
RING
RING

```

This example illustrates the case where the tag of the packet is not recognized by the modem.

```

RING
MESG = 060342424231
RING
RING

```

#### Unformatted Form Reporting –

The modem presents all information and packet control information found in the message. The modem, however, excludes the leading U's (channel seizure information) from the presentation. The packet is presented in ASCII printable hex numbers, the modem does not insert spaces, or line feeds, for formatting between bytes or words of the packet.

The modem does not detect the checksum of the packet.

Example of Unformatted Form Reporting –

RING  
0412303332323234303539313435353132333435  
RING  
RING

## Modem S Registers

The S registers are summarized below along with their default values. Registers denoted with \* may be stored in one of the two user profiles by entering the &Wn command. One of these profiles may be loaded at any time by using the Zn command. Registers denoted with \*\* indicate that the information is downloaded to the flash memory.

### Default Register Settings

The factory default values are stored in ROM and are loaded into the active configuration at power up or by the Zn command. In addition, the designated default profile is subsequently loaded, and might change some of the factory default values. The designated default profile can be changed by entering the &Yn command where n is one of the two possible user profiles. All of the factory default values may be loaded at any time by entering the &F command.

Register	Title	Default	Parameters
S0 *	Number of Rings Till Auto-Answer	0	0-255 rings
S1	Ring Counter	0	0-255 rings
S2 *	Escape Character	43	0-255, ASCII
S3	Carriage Return Character	13	0-127, ASCII
S4	Line Feed Character	10	0-127, ASCII
S5	Back Space Character	8	0-32, ASCII
S6	Wait For Blind Dialing *	2	2-255 sec.
S7 *	Wait For Carrier After Dial	50	1-255 sec.
S8 *	Pause Time For Dial Delay	2	0-255 sec.
S9 *	Carrier Detect Response Time	6	1-255 1/10sec.
S10	Lost Carrier To Hang Up Delay	14	1-255 1/10sec.
S11 *	DTMF Tone Duration	95	50-255 msec.
S12 *	Escape Code Guard Time	50	0-255 1/50sec.
S13	Reserved	none	none
S14 *	Bit Mapped Options **	159	none
S15	Reserved	none	none
S16	Bit Mapped Test Options **	0	none

S17	Reserved	none	none
S18 *	Test Timer	0	0-255 sec.
S19	Reserved	0	none
S20	Reserved	none	none
S21 *	Bit Mapped Options **	52	none
S22 *	Bit Mapped Options **	117	none
S23 *	Bit Mapped Options **	54	none
S24	Sleep Inactivity Timer	10	0-255 sec.
S25 *	Delay To DTR	5	0-255 1/100sec.
S27 *	Bit Mapped Options **	73	none
S28	Bit Mapper Options	0	none
S29	Reserved	none	none
S30 *	Inactivity Timer	0	0-255
S31	Bit Mapper Options **	194	none
S32	XON Flow Control Character	17	0-255
S33	XOFF Flow Control Character	19	0-255
S34-S35	Reserved	none	none
S36 *	LAPM Failure Control	7	0-7
S37 *	Desired Telco Line Speed	0	0-12
S38 *	Delay Before Forced Disconnect	20	0-255
S39 *	Bit Mapped Options **	3	none
S40	Bit Mapped Options (MNP) **	104	none
S41	Bit Mapped Options (MNP) **	195	none
S44	Unused	none	none
S46 *	Protocol Selection	138	136 or 138
S48 *	V.42 Negotiated Action	7	0, 7 or 128
S86	Connection Failure Cause Code	0	0, 4, 5, 9, 12-14
S95 *	Extended Result Codes	0	0-7

## Facsimile Commands

Facsimile commands are listed here only for reference. Use of these commands should be limited to facsimile application software.

If you have additional questions about the facsimile operation, please contact Ositech.

## Class 1 Commands

Command	Function
+FCLASS=n	Service class.
+FAE=n	Data/fax auto answer.
+FRH=n	Receive data with HDLC framing.
+FRM=n	Receive data.
+FRS=n	Receive silence.
+FTH=n	Transmit data with HDLC framing.
+FTM=n	Transmit data.
+FTS=n	Stop transmission and wait.

## Class 2 Commands

Command	Function
+FCLASS=n	Service class.
+FAA=n	Adaptive answer.
+FAXERR	Fax error value.
+FBOR	Phase C data bit order.
+FBUF?	Buffer size (read only).
+FCFR	Indicate confirmation to receive.
+FCLASS=	Service class.
+FCON	Facsimile connection response.
+FCIG	Set the polled station identification.
+FCIG:	Report the polled station identification.
+FCR	Capability to receive.
+FCR=	Capability to receive.
+FCSI:	Report the called station ID.
+FDCC=	DCE capabilities parameters.
+FDCS:	Report current session.
+FDCS=	Current session results.
+FDIS:	Report remote capabilities.
+FDIS=	Current sessions parameters.
+FDR	Begin or continue phase C receive data.
+FDT=	Data transmission.
+FDTC:	Report the polled station capabilities.
+FET:	Post page message response.
+FET=N	Transmit page punctuation.

+FHNG	Call termination with status.
+FK	Session termination.
+FLID=	Local ID string.
+FLPL	Document for polling.
+FMDL?	Identify model.
+FMFR?	Identify manufacturer.
+FPHCTO	Phase C time out.
+FPOLL	Indicates polling request.
+FPTS:	Page transfer status.
+FPTS=	Page transfer status.
+FREX?	Identify revision.
+FSPL	Enable polling.
+FTSI:	Report the transmit station ID.



---

# Chapter 8: Troubleshooting

This section covers:

- Overview
  - Running the Windows 9x Diagnostics
  - Running the DOS Diagnostics
- 

## Overview

If you experience any problems with your Jack of Spades PC Card, run either the Windows 9x diagnostics program, or the Ositech DOS Diagnostics software.

Users of Windows NT or other operating systems must use a DOS or Windows 95 boot disk. The boot disk should not load any drivers, except those necessary to run the operating system. The boot disk should also have all the files from the `a:\DIAGS` directory on it so that you can run the diagnostics directly from the boot disk. This will avoid file system incompatibility (i.e. NTFS, HPFS, etc.).

The Diagnostics software must be run in a clean DOS environment or from the Windows 95 Safe mode command prompt.

## Running the Windows 9x Diagnostics

You can test the Jack of Spades PC Card using the Diagnostics tools in the Modems Properties control panel. Before running the diagnostics, ensure you close all applications that are using the Jack of Spades PC Card.

The Windows Diagnostics must be run in the Safe mode command prompt.

To run in the Safe mode command prompt:

- 1 Restart your computer.
- 2 When you see the **Starting Windows 9x...** message, press F8.
- 3 Choose the Safe mode command prompt option.

To run the Windows 9x diagnostics:

- 1 From the Start>Settings menu, select Control Panel.
- 2 Double-click Modems. The Modems Properties window opens.

- 3 Click the Diagnostics tab. The Diagnostics property page opens.

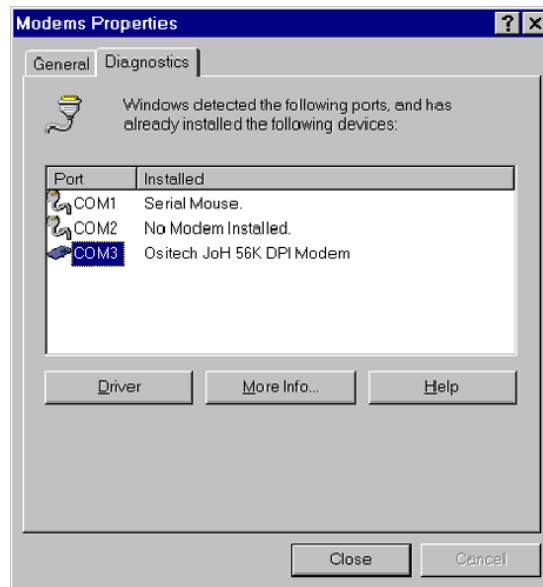


Figure 8-1: Modem Properties Diagnostics property page

- 4 Click the COM Port assigned to the Jack of Spades PC Card.
- 5 Click More Info... The diagnostics attempt to communicate with the modem. The More Info... window opens.

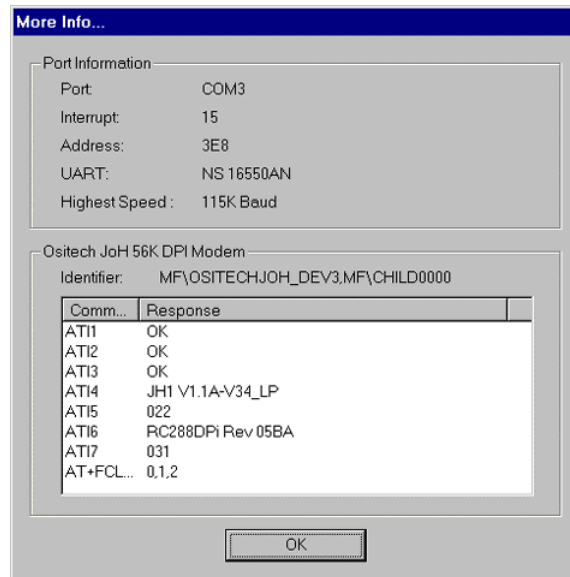


Figure 8-2: More Info window

One of the following results occurs. Refer to the related result and follow the appropriate procedure:

- |           |   |
|-----------|---|
| Result:   | The Open COMM window opens. The following message appears:<br><b>Port already open.</b> |
| Cause:    | An application using the Jack of Spades PC Card is running.                             |
| Solution: | Close all applications using the Jack of Spades PC Card and run the diagnostics again.  |
| Result:   | The Open COMM window opens. The following message appears:<br><b>Can't open port.</b>   |
| Cause:    | The Jack of Spades PC Card is not inserted into the PC Card slot properly.              |
| Solution: | Re-insert the Jack of Spades PC Card and run the diagnostics again.                     |
| Cause:    | The Jack of Spades PC Card software is not installed properly.                          |
| Solution: | Re-install the Jack of Spades PC Card software and run the diagnostics again.           |
| Result:   | The More Info... window opens. No Error responses are reported after the ATIn command.  |
| Cause:    | The Jack of Spades PC Card is functioning normally.                                     |
| Solution: | If you are still experiencing problems, contact Ositech's Technical Support department. |
| Result:   | The More Info... window opens. An Error response is reported after the ATIn command.    |
| Cause:    | Some function of the Jack of Spades PC Card is not responding properly.                 |
| Solution: | Record the More Info... report and contact Ositech's Technical Support department.      |

Results of the test might vary.

- 6 When you are finished running the diagnostics, click OK to close all open diagnostic windows.

## Running the DOS Diagnostics

Ositech provides a self test diagnostic program to verify that all functions of the Jack of Spades PC Card are working properly. The diagnostic program performs basic tests of the network and modem functions.

Before running the diagnostics software you require the following information:

- Free 8 byte range of I/O ports on 64 byte I/O boundary (i.e. 300, 340; not 310, or 320).
- Available interrupt from these possible values 3-5,7,9-12,14 or 15.
- Free 4K block of local memory

Before running the diagnostics software, ensure the Jack of Spades PC Card is installed properly in a PC Card slot.

The diagnostics software must be run in a clean DOS environment.

To test the Jack of Spades PC Card using the diagnostics software:

- 1 Boot up your computer in DOS.
- 2 When you see the message **Starting MS-DOS...** press F5.  
No drivers are loaded. (i.e. bypass CONFIG.SYS and AUTOEXEC.BAT).
- 3 Insert the JoS Diagnostic disk into the 3.5 inch disk drive.
- 4 At the DOS prompt type `a:\JOSDIAGS`, and press Enter.
- 5 At the DOS prompt type `a:\JOSDIAGS.EXE`, and press Enter.
- 6 Select Basic Adapter Tests from the menu.  
The second menu opens.
- 7 Enter the setting for the Socket, I/O port, interrupt and memory windows needed to enable the Jack of Spades PC Card.

Changes made to any settings are for diagnostic purposes only. No changes are permanently stored. Any incorrect settings will not affect the operation of the Five of Hearts PC Card.

In most cases the default values shown below will work satisfactorily:

Socket: Auto

I/O Port: 300

Interrupt: 7

Memory Window: D000

- 8 Select Start Basic Adapter Tests to perform the tests. The test menu appears with a list of tests to perform and the current test results.  
All test results must indicate **OK** for successful verification of the Jack of Spades PC Card.

The basic adapter tests can fail due to an improper test environment. Verify that the Socket, I/O port, Interrupt and Memory Window are not in use by other hardware on the computer.

---

# Chapter 9: Modem Test Procedures

This section covers:

- Overview
  - Local Analog Loopback with Self-Generated Pattern
  - Testing modem memory
  - Local Modem Self-Test
  - Remote Digital Loopback
  - Local Digital Loopback
  - Local Analog Loopback
  - Remote Digital Loopback with Self-Generated Pattern
- 

## Overview

This section describes the different tests you can perform to determine the source of a problem.

## Local Modem Self-Test

To run a local self-test:

- 1 Ensure the modem is in an interactive or local mode. Refer to your communications software documentation for more information.  
Type `at` and press Enter.  
The modem responds with **OK**.
- 2 If you cannot see the characters you entered, the local modem echo is off. To turn on the local modem echo, type `ate1` and press Enter.
- 3 If double characters appear on the screen, both the modem and software are set to local echo on. To set the modem to local echo off, type `ate0` and press Enter.  
If **0** appears on your screen instead of **OK**, the numeric form result codes have been enabled. To select textual result codes, type `atv1` and press Enter. The modem responds with **OK**.  
If the modem does not respond:
  - Ensure that the communications software setup procedure was run after the modem was installed. Setup must be run each time the modem is installed.
  - Check that the COM port address of the serial port is identical to the software COM port assignment.

## Local Analog Loopback

This test checks the path between the local modem and the PC. This test only works when the modem is in direct mode (`&Q0`) and the COM port baud rate is set to 56Kbps or less.

Before running the local analog loopback test, ensure your modem is in command mode.

To run a local analog loopback test:

- 1 Type `at&t1` and press Enter. Wait until the modem returns a **CONNECT** message.
- 2 Enter a test message. For example, type `This message should be echoed back.`  
The message should immediately appear on the screen as you enter it.
- 3 Type `+++`.  
This command is an escape sequence which returns the modem to command mode.  
The modem responds with **OK**. The modem is now in command mode.
- 4 Type `at&t0` and press Enter to end the test.

## Local Analog Loopback with Self-Generated Pattern

This test verifies the integrity of the local modem transmit and receive circuits. The test works only when the modem is in direct mode (`&Q0`) and the COM port baud rate is set to 56Kbps or less.

For this test, the modem must be in command mode.

To run a local analog loopback with self-generated pattern test:

- 1 Type `at&t8` and press Enter. Wait approximately ten seconds.  
The modem does not respond visibly.
- 2 Type `at&t0` and press Enter to mark the end of the test. The modem responds with a three-digit number indicating the test results.

During this test, a continuous data sequence is sent by the local modem transmitter and picked up by the local modem receiver. The transmitted and received data sequences are compared and the modem then returns a three-digit number indicating test results. If the result is 000, the local modem transmit and receive circuits have passed the test.

## Remote Digital Loopback

This test checks the local and remote modems and the telephone circuit. The test only works when the modem is set to direct mode (`&Q0`) and the COM port baud rate is set to 56Kbps or less.

The modem sends a message to the remote unit. The remote unit loops the test message back. The resulting message is then compared with the original message to verify the connection. If the data patterns do not match, then a problem exists with either the local or remote modem or the telephone circuit. If this is the case, both local and remote stations might initiate local analog loopback tests to further isolate the source of the problem.

To run a remote digital test:

- 1 Type `at&f&q0` and press Enter to place the modem in basic asynchronous mode.
- 2 Establish a connection with a remote modem and type `+++` (the escape sequence) to revert to command mode. The modem responds with **OK**.
- 3 Type `at&t6` and press Enter to begin the test. The modem displays a **CONNECT** response if the loopback data link has been successfully completed. It displays an **ERROR** response if the link has failed.  
If successful, enter a test message. The message is echoed on the local screen.
- 4 Type `+++` (the escape sequence). The modem responds with **OK**.
- 5 Type `at&t0` and press Enter to end the test. The modem responds with **OK**.

## Remote Digital Loopback with Self-Generated Pattern

This procedure tests the remote modem port, the telephone line and the local serial and modem ports. The test works only when the modem is in direct mode (&Q0) and the COM port baud rate is set to 56Kbps or less.

This test is similar to the Remote Digital Loopback test.

In this test, the local modem sends the remote modem a special test data sequence and the remote modem returns the data. The local modem examines the returned data and establishes an error count each time a mismatch is detected.

To run a remote digital with self-generated pattern test:

- 1 Establish a connection with a remote modem.
- 2 Type `at&t4` and press Enter to ensure that the remote operator has set the modem to accept a Remote Digital Loopback request.
- 3 Type `at&t7` and press Enter to initiate the remote digital loopback test. The modem sends a test pattern to the remote modem.
- 4 Type `at&t0` and press Enter to end the test. The modem returns a three-digit number showing the test results. If the result is 000, the local and remote modems and the telephone line have passed the test.

## Local Digital Loopback

This test is used to verify the communications link with the remote modem, and works only when the modem is in direct mode (&Q0) and the COM port baud rate is set to 56Kbps or less.

To run a local digital loopback test:

- 1 Establish a connection with a remote modem.
- 2 Type `at&t3` and press Enter to place the modem into the local digital loopback mode.

- 3 Instruct the remote modem operator to enter a message.  
During this test the local modem simply loops any incoming data back to the remote modem. If the information sent mirrors the image received by the remote modem, the test is successful.
- 4 Type `at&t0` and press Enter to end the test.

## Testing Modem Memory

The `I` command can be used to obtain information about the modem's memory and perform a checksum test.

### Product Information

This test displays the modem's product information.

- Type `at i3` and press Enter. The modem responds with a line identifying the modem and its capabilities. Use this information when calling Ositech for technical support.

### ROM Checksum Test

This test compares the ROM checksum result with a stored value.

- Type `at i2` and press Enter to run this test. The modem responds with the **OK** prompt if the totals match, or an **ERROR** prompt if the totals differ. If the **ERROR** prompt appears, call Ositech technical support.



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## Chapter 10:Contacting Ositech

This section covers:

- Contact information
  - Technical support
  - Returning merchandise
- 

### Contact Information

At Ositech Communications Inc., we make every effort to provide you with products that fit your needs and work well. If you wish to communicate with Technical Support, Sales or any other department at Ositech, please contact us at any of the following phone numbers and addresses:

Toll Free Technical Support or Sales:	1-888-OSITECH (1-888-674-8324)
Technical Support (local):	(519) 836-8063 Ext. 401
Sales (local):	(519) 836-8063 Ext. 400
Fax:	(519) 836-6156
Website:	<a href="http://www.ositech.com">www.ositech.com</a>
FTP:	<a href="ftp://ftp.ositech.com">ftp.ositech.com</a>
Email Sales:	<a href="mailto:sales@ositech.com">sales@ositech.com</a>
Email Technical Support	<a href="mailto:support@ositech.com">support@ositech.com</a>
Mail:	Ositech Communications Inc. 679 Southgate Drive Guelph, Ontario, Canada N1G 4S2

### Technical Support

Before contacting Technical Support, please ensure you have the following information:

- Your address and telephone number.
- Product name, serial number and firmware version.
- Model and manufacturer of your computer.

- Name and version of the operating system you are using.
- Name and version of the communications or fax software you are using.
- Detailed description of your problem.

When you contact Technical Support, please have your computer, Ositech PC Card and disks available. Ensure your computer is plugged in or has ample battery power.

You can contact Technical Support by phone, Monday to Friday, 8:00 a.m. to 8:00 p.m. EST, or via the Internet 24 hours a day, 7 days a week:

Toll Free: 1-888-OSITECH (1-888-674-8324)

Local Phone Number: (519) 836-8063, Ext. 401

Fax: (519) 836-6156, Attn. Technical Support

Email: support@ositech.com

Technical Support calls are placed in a queue and are answered in the order in which they are received.

## Returning Merchandise

To return merchandise, you must receive an RMA number and application from one of our Technical Support associates.

The following terms apply to RMA's:

- Return ONLY the goods specified in the RMA.
- Items that are not listed on the RMA and that are returned to Ositech will ONLY be returned to you upon request (by returned FREIGHT COLLECT).

## Shipping Instructions

Once you have an RMA number, use the following guidelines when returning merchandise:

- Place the merchandise in bubble wrap and/or a padded shipping package.
- Write the RMA number prominently on the outside of the shipping container and on any shipping documents.
- Mark the package FRAGILE.
- Ship only the merchandise specified in the RMA.
- Use a traceable, insured method of shipment.

USA Customers

Ositech Communications Inc.  
c/o M&M Forwarding  
600 Main Street  
P.O. Box 888  
Tonawanda, NY 14150-0888  
USA

Canadian & International Customers

Ositech Communications Inc.  
430 Laird Rd., Unit No. 5-7  
Guelph, Ontario  
CANADA  
N1G 3X7  
CANADIAN GOODS RETURNING FOR REPAIR  
H.C.9813.00.00.95



---

# FCC Notice

---

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

## Modifications

The FCC requires the user be notified that any changes or modifications made to this device that are not expressly approved by Ositech Communications Inc. may void the user's authority to operate this equipment.

## Operating Conditions

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

## Canadian Electromagnetic Compatibility Advisory

This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations.

## Conseil sur la compatibilité des Electromagnétiques, pour le Canada

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

## US Regulations Governing the Use of Modems

This equipment complies with Part 68 of the Federal Communications Commission (FCC) rules for the United States.

A label is located on the back side of the modem containing both the FCC Registration Number and Ringer Equivalent Number (REN). You must upon request, provide this information to your telephone company: REN 0.6B .

Should you experience trouble with the Jack of Spades, please contact the following for repair or warranty information:

M&M Forwarding (1-800-563-2386)

600 Main Street, Tonawanda, New York 14150-0888

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company.

An FCC compliant telephone cord and modular plug are provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack which is part 68 compliant. See installation instructions for details.

If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

This equipment cannot be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

If the Jack of Spades causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

Occasionally, your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of your equipment. If so, you will be given advance notice of the change to give you an opportunity to maintain uninterrupted service.

The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device, including fax machines, to send messages unless such message clearly contains in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business or other entity, or other individual sending the message and the telephone number of the sending machine or such business, other entity, or individual. (The telephone provided may not be a 900 number or any other number for which charges exceed local or long distance transmission charges.)

In order to program this information into your fax machine, you should: Refer to Fax Software Package .

These requirements apply to all fax machines and have been extended to all fax modems manufactured on or after 12/13/95.

## Industry Canada Warnings

Notice: The Industry Canada Label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing the equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of the service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

Notice: The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices

subject only to the requirement that the sum of the Ringer Equivalence Number of all the devices does not exceed 5.

For information on the location of the authorized Canadian maintenance facility nearest you, contact Ositech Communications Inc.

# Technical Specifications

## Ethernet

Cable Type	10Base-T (Twisted Pair) 100BaseTX (Twisted Pair)
Network Interface Standard	IEEE 802.3 10Base-T IEEE 802.3u-1995
Network Connection	Direct Cable with RJ-45 Plug Direct Cable with RJ-45 Plug
Cable Category	Minimum Level 3 Minimum Level 5
Operating Distance	100 Meters 100 Meters
Full Duplex Support	Yes Yes
Auto-Negotiation	N-WAY N-WAY
Data Bus width	32 bit (CardBus) 32 bit (CardBus)



## Data/Fax Modem with DPI™

Data Access Arrangement	Internal – International Variant available with multi-country support
Telephone Interface	2 wire or leased line 56k ITU Standard (V.90) Support Guaranteed free software upgrade from <a href="http://www.ositech.com">www.ositech.com</a> when available
Telephone Connection	Direct via supplied RJ11 cable
Digital Line Protector	Internal, intelligent autodetecting circuit that will protect against accidental connection to a digital phone line for unlimited duration
DPI™ (Digital Phone Interface)	Internal interface enables data/fax communications through most digital (PBX) telephones
Memory	Flash memory for easy firmware updates. Non-volatile memory for up to four 36-digit telephone numbers and two user profiles
Compatibility	Bell 103, 212A, V.21, V.22, V.22bis, V.23, V.26bis, V.32, V.32bis, V.34, K56Flex and V.90 Group III, and Class I and II Fax (V.17, V.29 and V.29ter)
Communication Speeds	Data up to 56,000 bits/sec. when connected to V.90 or K56Flex service provider Fax up to 14,400 bits/sec. Cellular up to 14,400 bits/sec. with cellular models only
Parity Sensing	Odd, Even, Mark, Space, None
Protocols	MNP 2-5, MNP 10, MNP 10-EC, V.42 LAPM, V.42bis
Cellular	Direct Connect
Call Tones Detected	Answer, dial, ring back, credit card
Diagnostics	Local analog loopback with self test Local digital loopback with self test Remote digital loopback with self test Line signal strength and Line quality monitoring

## Common

PCMCIA Compatibility	Type II Release 2.1
Registration	FCC Part 68 and Part 15 Class B
Typical Power Consumption	Note: Uses 3.3 volt CardBus technology Idle 108 mA Modem Only 560 mA 10BaseT Only 165 mA 100BaseTX Only 230 mA 10BaseT + Modem 620 mA 100BaseTX + Modem 710 mA
Operating Environment	Temperature 0° - 50°C, Humidity 10% - 95%, non-condensing

## Warranty

OSITECH COMMUNICATIONS INC. warrants each new OSITECH TRUMPCARD sold by OSITECH to be free from defective material and workmanship. OSITECH agrees to remedy in accordance with terms specified below, any such defect which is disclosed under conditions of normal installation, use and service. To exercise this warranty the purchaser must deliver the unit intact for examination, with all transportation charges prepaid, to a servicing site designated by OSITECH.

This warranty does not apply if the Product has been modified or subjected to misuse, neglect, or accident; or if the Product has been repaired or altered by an unauthorized service depot so that its performance or reliability has been impaired; or if the Product has had the serial number altered, effaced or removed; or if it has been damaged by accessories, peripherals, and other attachments not approved by OSITECH.

The specific terms of the warranty are as follows:

- 1 The warranty period commences on the date the purchased unit is shipped to the purchaser by OSITECH, or an Authorized Reseller of OSITECH or by a transportation common carrier acting on OSITECH's behalf.
- 2 The warranty agreement only applies to the original purchaser. However when an Authorized Reseller of OSITECH resells the Products, pursuant to its rights hereunder, the said warranty shall apply to any persons or corporations which purchase such Products from the Reseller.
- 3 For a warranty period of five (5) years, OSITECH will be responsible for both material and labor required to effect all repairs under terms of the warranty agreement, providing the unit is returned to OSITECH as specified above.

- 4 OSITECH supports the equipment up to the time when the equipment is manufacturer discontinued. At such time, OSITECH will provide modules and accessories, upon request, necessary to maintain the equipment, for a period of two (2) years thereafter, subject to availability of material and components from OSITECH's suppliers.

This warranty is in lieu of all other warranties, expressed or implied and no representative or person is authorized to assume for OSITECH any other liability in connection with the sale of the equipment.

IN NO EVENT SHALL OSITECH BE LIABLE, WHETHER IN CONTRACT OR IN TORT OR ON ANY OTHER BASIS, FOR ANY DAMAGES SUSTAINED BY THE CUSTOMER OR ANY OTHER PERSON ARISING FROM OR RELATED TO LOSS OF USE, FAILURE OR INTERRUPTION IN OPERATION OF ANY PRODUCTS, OR DELAY IN MAINTENANCE OR FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT OR SPECIAL DAMAGES OR LIABILITIES, OR FOR LOSS OF REVENUE, LOSS OF BUSINESS OR OTHER FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE SALE, LEASE, MAINTENANCE, USE, PERFORMANCE, FAILURE OR INTERRUPTION OF THE PRODUCTS.

Except as expressly set forth in this warranty, OSITECH makes no other warranties, expressed or implied, including any implied warranties of merchantability and fitness for a particular purpose. OSITECH expressly disclaims all warranties not stated in this limited warranty. Any implied warranties that may be imposed by law are limited to the terms of this express limited warranty.



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